PROGRAMMATIC ENVIRONMENTAL ASSESSMENT FOR IMPLEMENTATION OF THE CONSERVATION RESERVE ENHANCEMENT PROGRAM AGREEMENT FOR LOUISIANA

Draft

US Department of Agriculture
Farm Service Agency

September 2004

ACRONYMS AND ABBREVIATIONS

2002 Farm Bill	Farmland Security and Rural Investment Act of 2002
AQCR	Air Quality Control Region
AQI	Air Quality Index
BEA	Bureau of Economic Analysis
BLS	Bureau of Labor Statistics
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
COE	U.S. Army Corps of Engineers
CP	conservation practice
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWA	Clean Water Act
EO	Executive Orders
EPA	U.S. Environmental Protection Agency
EQIP	Environmental Quality Incentives Program
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FSA	Farm Service Agency
FW	Farmed Wetlands
HEL	highly erodible land
LDEQ	Louisiana Department of Environmental Quality
NAAQS	National Ambient Air Quality Standards
NRHP	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
O_3	ozone
Pb	lead
PEA	Programmatic Environmental Assessment
PIP	Practice Incentive Payment
PEIS	Programmatic Environmental Impact Statement
PM_{10}	particulate matter less than 10 microns in diameter
ROI	Region of Influence
SHPO	State Historic Preservation Office
SIP	Signing Incentive Payment
SRR	soil rental rate
SO_2	sulfur dioxide
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
WRP	Wetland Reserve Program

EXECUTIVE SUMMARY

This Programmatic Environmental Assessment (PEA) has been prepared by the United States Department of Agriculture (USDA) Farm Service Agency (FSA) in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality NEPA implementing regulations, and 7 CFR 799 *Environmental Quality and Related Environmental Concerns – Compliance with the National Environmental Policy Act.*

This PEA describes the potential environmental consequences resulting from the proposed implementation of Louisiana's Lower Ouachita River Basin Conservation Reserve Enhancement Program (CREP) agreement (Ouachita CREP). The environmental analysis process is designed: to ensure the public is involved and informed about the potential environmental effects of a proposed action; and to help decision makers take environmental factors into consideration when making decisions related to a proposed action.

Purpose and Need for the Proposed Action

The purpose of the proposed action is to implement Louisiana's CREP agreement. Under the agreement, eligible farmland in the Lower Ouachita River Basin would be removed from production and approved conservation practices, such as tree planting, installation of riparian buffers, and wetland restoration, would be implemented. Landowners would receive annual rental payments and would be eligible for one time payments to support the implementation of conservation practices.

The Ouachita CREP agreement is needed to meet the goals of CREP:

- improve water quality,
- protect drinking water,
- control soil erosion,
- protect threatened and endangered species, and
- assist the State in complying with environmental regulations that are related to agriculture.

Proposed Action and Alternatives

The proposed action would implement Louisiana's CREP agreement. Under this agreement, 50,000 acres of eligible farmland in the following nine parishes in the Lower Ouachita River Basin would be enrolled in CREP: Caldwell, Catahoula, East Carroll, Franklin, Madison, Morehouse, Ouachita, Richland, West Carroll.

Landowners would enroll eligible farmland by entering into 15 year contracts with FSA. Conservation practices would be established and maintained on enrolled lands and landowners would receive annual

rental payments for the contract duration. Landowners would also receive financial and technical support for implementing and maintaining the practices.

This PEA documents the analysis of the Proposed Action and the No Action Alternative. Under the No Action Alternative, no lands would be enrolled in CREP. None of the conservation practices or rental payments proposed would be implemented.

Summary of Environmental Consequences

It is expected that there would be both short term and long term positive, as well as temporary, minor, negative impacts associated with implementation of the proposed action. A summary of the potential impacts is given in Table ES-1.

Table ES-1. Summary of Potential Environmental Impacts Resulting from the Proposed Action and No Action Alternative

Resource	Proposed Action	No Action Alternative
Biological Resources	The proposed action is expected to contribute to vegetation and wildlife diversity. Positive impacts to threatened and endangered species, species of concern, and their habitats are expected.	Continued degradation of terrestrial and aquatic habitats; potential for invasion by exotic species.
Cultural Resources	There is high potential for encountering archaeological resources. Site specific archaeological and historic architectural surveys and coordination with SHPO are recommended prior to the installation of conservation practices. Consultation with several tribes that have traditional ties to the area may be required once sites are selected.	No major impacts are expected, though negative impacts to cultural resources could result from changes in existing farming practices or the disturbance of previously undisturbed land.
Water Resources	Significant long term positive impacts to surface and groundwater quality are expected. Wetlands acreages are expected to increase as a result of the proposed conservation practices. Temporary minor impacts to existing wetlands and localized surface water quality may result from runoff during activities associated with the installation of the proposed conservation practices.	Continued degradation of surface and ground water and wetlands is expected to result if the proposed action is not implemented.

Table ES-1. Summary of Potential Environmental Impacts Resulting from the Proposed Action and No Action Alternative (cont'd.)

Resource	Proposed Action	No Action Alternative
Earth Resources	Positive impacts to localized topography and soils are expected to result from implementation of the proposed action	Continued erosion is expected to result if the proposed action is not implemented.
Air Quality	No impacts to attainment status or violations of State Implementation Plan standards would result from the proposed action. However, localized temporary minor impacts to air quality may result from ground disturbing activities, burning, and the use of heavy equipment during the installation of conservation practices.	No change from current conditions is expected.
Recreational Resources	Positive long term effects on recreational resources are expected. The proposed conservation practices are expected to increase habitat for game and non-game species. Water quality improvements would result in better recreational fishing and other water-related recreation.	No change from current land-based recreational opportunities is expected; however, continued water quality degradation may affect game fish or other water related recreation.
Socioeconomics and Environmental Justice	Increased land values and a loss of farm labor jobs and expenditures are expected to result from the implementation of the proposed action. The project area is not considered an area of concentrated minority population or poverty area, therefore, no impacts to low income and minority populations would occur.	No change in current trends in socioeconomic conditions is expected.

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States Department of Agriculture (USDA) Farm Service Agency (FSA) proposes to implement the Conservation Reserve Enhancement Program (CREP) agreement for the state of Louisiana. This Programmatic Environmental Assessment (PEA) has been prepared to analyze the potential environmental consequences associated with the proposed action and No Action Alternative in accordance with the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) regulations; and 7 Code of Federal Regulations (CFR) 799 *Environmental Quality and Related Environmental Concerns – Compliance with the National Environmental Policy Act.*

1.2 BACKGROUND

The Farm Service Agency and Conservation Reserve Program

FSA was established during the reorganization of USDA in 1994. The mission of FSA is to "ensure the well being of American agriculture, the environment and the American public through efficient and equitable administration of farm commodity programs; farm ownership, operating and emergency loans; conservation and environmental programs; emergency and disaster assistance; domestic and international food assistance and international export credit programs."

FSA's Conservation Reserve Program (CRP) is the Federal government's largest private land environmental improvement program. CRP is a voluntary program that supports the implementation of long term conservation measures designed to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land.

Conservation Reserve Enhancement Program

CREP was established in 1997 under the authority of CRP. The purpose of CREP is to address agriculture related environmental issues by establishing conservation practices (CPs) on farmlands using funding from state, tribal, and Federal governments as well as non-government sources. Federal funding is provided by the Commodity Credit Corporation. CREP addresses high priority conservation issues in specific geographic areas such as watersheds. Owners of lands eligible for inclusion in CREP receive annual rental payments in exchange for implementing approved CPs. In addition, landowners may receive monetary support for establishing these practices.

Statewide CREP agreement proposals are developed by teams that can consist of state, tribal, Federal and local government agency representatives, producers and other stakeholders. Draft CREP proposals are

submitted to FSA by the state's Governor. An interagency panel then reviews the agreement. A final CREP proposal is set into practice through a Memorandum of Agreement between USDA and the Governor. CREP programs are limited to 100,000 acres per state.

In 2003, a final Programmatic Environmental Impact Statement (PEIS) was prepared for the proposed nationwide CRP, authorized under the Farm Security and Rural Investment Act of 2002 (2002 Farm Bill) (FSA 2003). The PEIS contained the results of detailed analyses of the impacts of implementing CRP nationwide including the CREP component. The analysis of the impacts of implementing Louisiana's Lower Ouachita River Basin CREP (Ouachita CREP) agreement that are presented in this document tier from the nationwide PEIS. Louisiana's CREP agreement would potentially remove 50,000 acres of eligible farmland in the Lower Ouachita River Basin from production and establish approved CPs on the land. Specific lands that would be enrolled in the program have not yet been identified. Once eligible lands are enrolled, a site specific environmental evaluation would be completed for each contract. If potential adverse impacts are noted during the environmental evaluation, an environmental assessment would be prepared for the site.

Louisiana CREP Goals

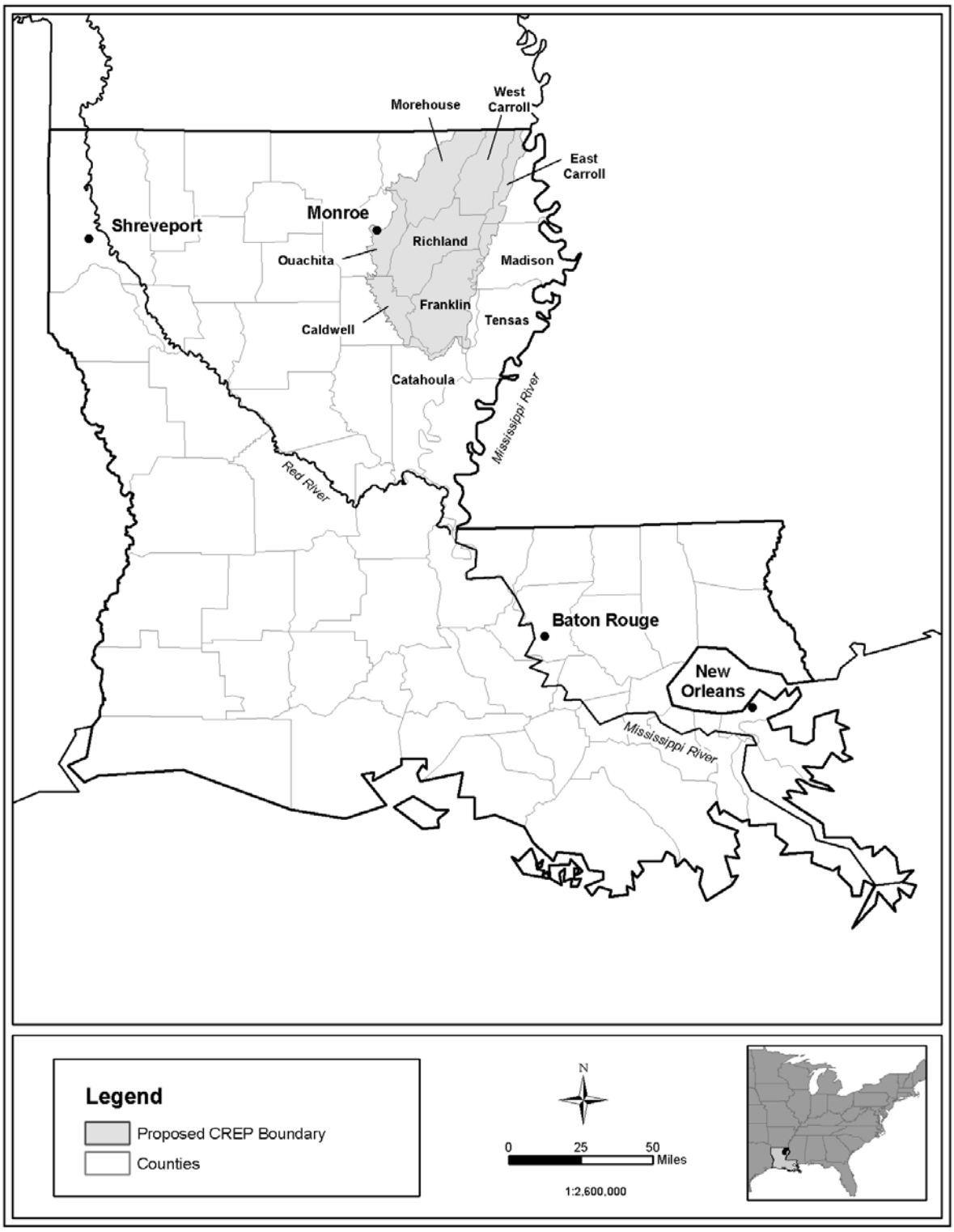
CREP agreements are designed to meet specific regional conservation goals and objectives. For the Lower Ouachita River Basin CREP, these goals include the following (FSA 2004):

- reduce sediment loading in streams, bayous, and lakes by 30 percent by reducing erosion rates and off-field transportation of herbicides, pesticides, and nutrients;
- provide protection of sub-surface water sources from contamination by agricultural chemicals, nitrates, and pathogens;
- assist producers in establishing shallow water wetlands to serve as nutrient/chemical uptake and filtering and habitat for neotropical migratory birds, shorebirds, wading birds, waterfowl, and other wetland dependent species;
- establish critical habitat for fish and wildlife by developing wildlife habitats and riparian areas; and
- establish specific management for wetlands and support to landowners to train them in these techniques.

The Ouachita River Basin

The Ouachita Basin covers over 10,000 square miles in northwestern Louisiana in Caldwell, Catahoula, East Carroll, Franklin, Madison, Morehouse, Ouachita, Richland, and West Carroll Parishes (see Figure 1.2-1). The proposed CREP area contains approximately 932,400 acres of cropland, 283,050 acres of pastureland, 249,750 acres of forestland, and 199,800 acres that are used for other purposes (FSA 2004).

Figure 1.2-1 Proposed Ouachita CREP Area



The CREP area covers the Bayou Macon and Boeuf watersheds. A small western portion of the Boeuf watershed is a mosaic of forest, cropland, and pasture. This portion of the watershed supports major poultry and aquaculture operations that occur locally throughout the region. The remainder of the Boeuf watershed and the entire Bayou Macon watershed produce large amounts of cotton and rice and has concentrations of industrial and urban activity. Cotton, soybeans, rice, sorghum, corn, sugarcane, hay, and wheat are grown in this region. Wet soils are common and must be artificially drained to be farmed. The wettest areas that have not been artificially drained remain in forests and wetlands and are important wildlife habitat. Urban and industrial areas are found in the region and human population is increasing. Urbanization, industrial activity, and agricultural runoff have affected the region's water quality.

1.3 PURPOSE AND NEED FOR THE ACTION

The purpose of the action is to implement Louisiana's CREP agreement. Under the agreement, eligible farmland in the Lower Ouachita River Basin would be removed from production and approved CPs, such as tree planting, installation of riparian buffers, and wetland restoration, would be implemented. Landowners would receive annual rental payments and would be eligible for one-time payments to support the implementation of CPs.

The Louisiana CREP agreement is needed to meet the following CREP goals: to improve water quality, protect drinking water, control soil erosion, protect threatened and endangered species, and to assist the state in complying with environmental regulations that are related to agriculture in this important geographic region.

1.4 REGULATORY COMPLIANCE

This PEA is prepared to satisfy the requirements of NEPA (Public Law 91-190, 42 United States Code 4321 et seq.); its implementing regulations (40 CFR 1500-1508); and FSA implementing regulations, *Environmental Quality and Related Environmental Concerns – Compliance with the National Environmental Policy Act* (7 CFR 799). The intent of NEPA is to protect, restore, and enhance the human environment through well informed Federal decisions. A variety of laws, regulations, and Executive Orders (EO) apply to actions undertaken by Federal agencies and form the basis of the analysis presented in this document. These include but are not limited to:

- Endangered Species Act (ESA)
- National Historic Preservation Act (NHPA)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- EO 11988, Floodplain Management

- EO 11990, Protection of Wetlands
- EO 11514, Protection and Enhancement of Environmental Quality
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations

1.5 ORGANIZATION OF THE PEA

This PEA assesses the potential impacts of the proposed action and the No Action Alternative on potentially affected environmental and economic resources. Chapter 1.0 provides background information relevant to the proposed action, and presents its purpose and need. Chapter 2.0 describes the proposed action. Chapter 3.0 describes the baseline conditions (i.e., the conditions against which potential impacts of the proposed action and alternatives are measured) for each of the relevant resource areas while Chapter 4.0 describes the potential environmental impacts the proposed action and alternatives would have on these resources. Chapter 5.0 includes analysis of cumulative impacts. Chapter 6.0 is a list of the preparers of this document and Chapter 7.0 provides a list of persons and agencies contacted during the preparation of this document. Chapter 8.0 contains references and Chapter 9.0 is a glossary of terms.

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2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION AND ALTERNATIVES

FSA proposes to implement Louisiana's CREP agreement. The agreement would make possible the enrollment of 50,000 acres of eligible farmland in nine parishes in CREP by establishing contracts with landowners. Approved CPs would be established on these lands and landowners would receive support for the costs of installing and maintaining such practices as well as annual rental payments for land enrolled in the program.

Eligible Lands

Approximately 1,665,000 acres of land in the Lower Ouachita River Basin have been designated as priority for enrollment in CREP. This priority acreage lies within Caldwell, Catahoula, East Carroll, Franklin, Madison, Morehouse, Ouachita, Richland, and West Carroll Parishes. Louisiana's Lower Ouachita River Basin CREP agreement proposes to establish CPs on a total of 50,000 acres within this priority area. Participation in CREP is voluntary, therefore, the location, size, and number of tracts that would be enrolled is not known at this time. Table 2.1-1 contains the total acreage of the designated CREP area, cropland acreages, and the number of farms in each parish.

Table 2.1-1 Total CREP Acres, Estimated Farmed Acres, Number of Farms, and Type of Tillage for Parishes in the Proposed CREP Area

Parish	CREP Area (acres)	Farmland* (acres)	Number of Farms	Percent of Conservation Tillage**	Percent Conventional Tillage**
Caldwell	32,700	101,553	217	28	72
Catahoula	3,800	22,981	381	49	51
East Carroll	87,900	104,513	244	60	40
Franklin	220,000	368,777	732	56	44
Madison	9,536	10,009	279	8	92
Morehouse	232,200	311,087	402	5	95
Ouachita	39,000	116,488	377	77	23
Richland	213,000	360,094	483	60	40
West Carroll	113,100	234,009	539	2	98
Total	**951,236**	**1,629,511**	**3,654**	**-**	**-**

**farmland acreages for the CREP area in each parish are derived from parish farmland acreage and the percent of parish lands which lie within the CREP area*

***conservation and conventional tillage percentages are derived from 2003 data for each parish*

Source: Personal communication with David Carnline, Louisiana State Conservation Specialist and Mike Schooler, Louisiana State CREP Coordinator

Of the 50,000 proposed acres, 47,000 of the acres enrolled would be those designated highly erodible land (HEL) and 3,000 acres would be farmed wetlands (FW). HEL refers to land that requires great conservation effort to reduce erosion and to maintain soil that will sustain crops. FW are defined by the Natural Resources Conservation Service (NRCS) as wetlands that have been partially drained or are naturally dry enough to allow crop production in some years, but otherwise meet the soil, hydrological, and vegetative criteria defining a wetland (CRP 2003). It is estimated that 4,500 acres of pastureland and 45,500 acres of cropland will be enrolled. Table 2.1-2 contains a summary of CREP priority acreage and lands proposed for enrollment under the Lower Ouachita River Basin CREP. Table 2.1-3 contains a breakdown of cultivated cropland in each parish by type of crop grown, both irrigated and non-irrigated.

Table 2.1-2 Summary of Acreage in the Proposed Lower Ouachita River Basin CREP Priority Area

Land Use	Acres	Anticipated Enrollment (acres)
Cropland	932,400	45,500
Pastureland	283,050	4,500
Forestland	249,750	--
Other	199,800	--
Total	**1,665,000**	**50,000**

Source: FSA 2004

Table 2.1-3 Irrigated and Non-Irrigated Cropland Acreages in the Proposed Ouachita CREP Parishes

	Cotton		Soybeans		Corn		Rice	Milo	
	Irrigated	Non-Irrigated	Irrigated	Non-Irrigated	Irrigated	Non-Irrigated	Irrigated	Irrigated	Non-Irrigated
Caldwell	--	8,863	--	4,513	--	1,316	1,111	419	1,819
Catahoula	13,146	19,718	--	42,543	--	27,535	7,571	60,228	7,135
East Carroll	15,000	11,467	--	69,589	--	47,325	15,682	2,986	10,550
Franklin	40,955	13,651	--	28,446	--	43,238	651	5,561	36,417
Madison	40,000	17,425	--	53,802	--	90,064	6,897	6,991	6,254
Morehouse	40,022	17,153	--	36,796	--	74,485	29,696	10,631	8,422
Ouachita	11,426	2,413	--	9,202	--	--	8,185	--	4,873
Richland	23,386	11,318	--	23,797	--	34,082	6,396	6,178	26,882
West Carroll	10,000	4,561	--	19,045	--	16,814	7,319	7,605	20,180
Total	**193,935**	**106,559**	**--**	**287,733**	**--**	**334,799**	**83,508**	**100,599**	**122,532**

Source: FSA 2004

Properties eligible for enrollment in the proposed CREP are those that have been planted with an agricultural commodity during four of the six years between 1996 and 2001 and have been held by their landowners for at least 12 months. The minimum enrollment is 0.1 acre. In addition, lands enrolled in CREP would meet the following eligibility criteria.

- Riparian Buffers may exceed the 10 foot maximum average width only when needed for water quality protection.
- Land is eligible for Wetland Restoration if it is comprised of greater than 50 percent hydric soils and is located within the 100-year floodplain.
- Hydrology must be restored to pre-conservation site conditions as determined technically feasible on land devoted to Wetland Restoration.
- Riparian Buffers on both cropland and marginal pastureland and Filter Strips for cropland must be immediately adjacent and parallel to perennial streams, seasonal streams, or one of the wetland types capable of reducing damage by sedimentation and associated pollutants as defined in Handbook 2-CRP.
- Marginal pastureland may be enrolled only in Riparian Buffer.
- Marginal pastureland soil rental rate (SRR) limitations will not apply to Riparian Buffer.
- The 10 acre per tract buffer for Shallow Water Areas for Wildlife is waived.
- Signing Incentive Payment (SIP) and Practice Incentive Payment (PIP) eligibility is applicable on all practices.

Establish Conservation Practices

Those CREP CPs that are proposed for implementation under Louisiana's CREP agreement are listed in Table 2.1-4 along with anticipated enrollment for each CP. Descriptions of these practices, including their purposes and maintenance guidelines, are available in Appendix A (FSA 2003; USDA 2003). Preparation of lands for the installation of CPs may include: removal of existing vegetation and/or rocks through the use of tilling, burning, or approved agricultural chemicals; earthmoving to construct dams, levees, or dikes; installation of structures to regulate water flow; and installation of firebreaks, fencing, and roads.

Managed haying and grazing are authorized in conjunction with CPs 1, 2, and 4D. Two years must lapse between the establishment of CP1 and CP2 before the lands can be approved for managed grazing. Managed haying may occur two years after the establishment of CP1, CP2, and CP4D. Managed grazing and haying are allowable from July 16 through September 30 and are subject to minimum residual/stubble heights requirements (USDA 2003).

Table 2.1-4 Louisiana's Proposed Conservation Practices and Acreages Proposed For Each Practice.

Conservation Practice	# Acres
CP1: Introduced Grasses	1,000
CP2: Establishment of Permanent Native Grasses	150
CP3: Tree Planting	2,000
CP3A: Hardwood Tree Planting	14,000
CP4D: Permanent Wildlife Habitat	500
CP8A: Grassed Waterways	350
CP 9: Shallow Water Areas for Wildlife	1,000
CP 12: Wildlife Food Plots[1]	2,500
CP 21: Filter Strips[2]	1,000
CP 22: Riparian Buffer[3]	4500
CP 23: Wetland Restoration[4]	23,000

Sources: USDA 2003. FSA 2003.

[1] Available in conjunction with CP2, CP3, CP3A, CP4D
[2] Not authorized in conjunction with CP22, CP23
[3] Not authorized in conjunction with CP21, CP23
[4] Not authorized in conjunction with CP21, CP22

Provide Financial Support to Landowners

Owners of lands enrolled in Louisiana's CREP would enter 15 year contracts with FSA. Landowners would be eligible for annual rental payments for the duration of the contract period. The payments would be 150 percent of the average SRR for each parish. Acreage rental rates vary by land use, parish, and soil type. Table 2.1-5 provides average SRR for each parish. Additionally, one-time cost sharing and incentive payments are available to participants.

Table 2.1-5 Average Per Acre SRR for Parishes with Lands Eligible for Enrollment in the Proposed CREP

Parish	Rental Rate Per Acre
Caldwell	$41.85
Catahoula	$51.06
East Carroll	$65.38
Franklin	$50.25
Madison	$58.80
Morehouse	$48.74
Ouachita	$48.24
Richland	$48.33
West Carroll	$51.00

Source: Personal communication with David Carnline, Louisiana State Conservation Specialist.

All participants in Louisiana would be eligible for 90 percent cost assistance for the establishment of CPs. Cost sharing would account for 50 percent of the cost, based on an established statewide average cost and one-time PIP equal to 40 percent of the cost of establishing CPs. Additionally, participants are eligible for one time SIP equal to $10 per acre for each year of the contract.

The estimated cost of implementing Louisiana's CREP agreement is $72 million. Table 2.1-6 summarizes projected funding by source as well as estimated annual and one time costs. It is estimated that 650 participants would enter into contracts, that the average contract would cover 80 acres, and the average annual rental payment per contract would be $4,800. Table 2.1-7 shows estimated costs to USDA for implementing the proposed CPs.

Table 2.1-6 Projected Lower Ouachita River Basin CREP Agreement Funding and Participation Data

Source	Annual and One-time Costs
Federal Funding	$66,234,100
Local Funding	$55,195,778
Number of Program Participants	650
Average Contract Acreage	80
Average Annual Rental Payment	$4,800
Average One-time Costs per Contract	$16,000

Source: USDA 2004

Table 2.1-7 Estimated USDA Costs for Implementing Proposed Conservation Practices

Conservation Practice	Cost Share	PIP	SIP	Rental Payments	Total
CP1	$50,000	$40,000	$150,000	$1,038,900	$1,278,900
CP2	$12,000	$9,600	$22,500	$155,835	$199,935
CP3	$100,000	$80,000	$300,000	$2,077,800	$2,557,800
CP3A	$980,000	$784,000	$2,100,000	$14,544,600	$18,408,600
CP4D	$50,000	$40,000	$75,000	$519,450	$684,450
CP8A	$280,000	$224,000	$52,000	$363,615	$919,615
CP9	$200,000	$160,000	$150,000	$1,038,900	$1,548,900
CP12	$125,000	$100,000	$375,000	$2,597,250	$3,197,250
CP21	$50,000	$40,000	$150,000	$1,038,900	$1,278,900
CP22	$315,000	$252,000	$675,000	$4,675,050	$5,917,050
CP23	$1,610,000	$1,288,000	$3,450,000	$23,894,700	$30,242,700
Total	**$3,772,000**	**$3,017,600**	**$7,499,500**	**$51,945,000**	**$66,234,100**

Source: FSA 2004

2.2 ALTERNATIVES

Alternative A - Preferred Alternative

Under Alternative A, Louisiana's CREP agreement would be fully implemented as described above. A full 50,000 acres of eligible farmland would be removed from production. CPs would be established on those lands and landowners would receive one time and annual payments as described.

Alternative B - No Action Alternative

Under the No Action Alternative, the State of Louisiana's CREP agreement would not be implemented. No land would be enrolled in CREP and the goals of CREP would not be met. Though eligible lands could be enrolled in CRP or other conservation programs, the benefits of CREP – targeting land in the Ouachita River Basin for enrollment and providing financial incentives using non-Federal financial resources – would not be realized. This alternative will be carried forward in the analyses to serve as a baseline against which to assess the impacts of the Preferred Alternative.

3.0 AFFECTED ENVIRONMENT

This chapter describes relevant existing conditions for the resources potentially affected by the proposed action. In compliance with NEPA and CEQ regulations, the description of the affected environment focuses on those resources potentially subject to impacts.

3.1 BIOLOGICAL RESOURCES

3.1.1 Definition of Resource

Biological resources include living plant and animal species and the habitats within which they occur. For this analysis, these resources are divided into four categories: vegetation; wildlife; aquatic species; and threatened, endangered, and sensitive species and their defined critical habitat. Vegetation, wildlife, and aquatic species refer to the plants and animal species, both native and introduced, which characterize a region. Threatened, endangered, and sensitive species refer to those species which are protected by the ESA or similar state laws. Critical habitat is designated by the U.S. Fish and Wildlife Service (USFWS) as essential for the recovery of threatened and endangered species and like those species, is protected by the ESA.

3.1.2 Region of Influence

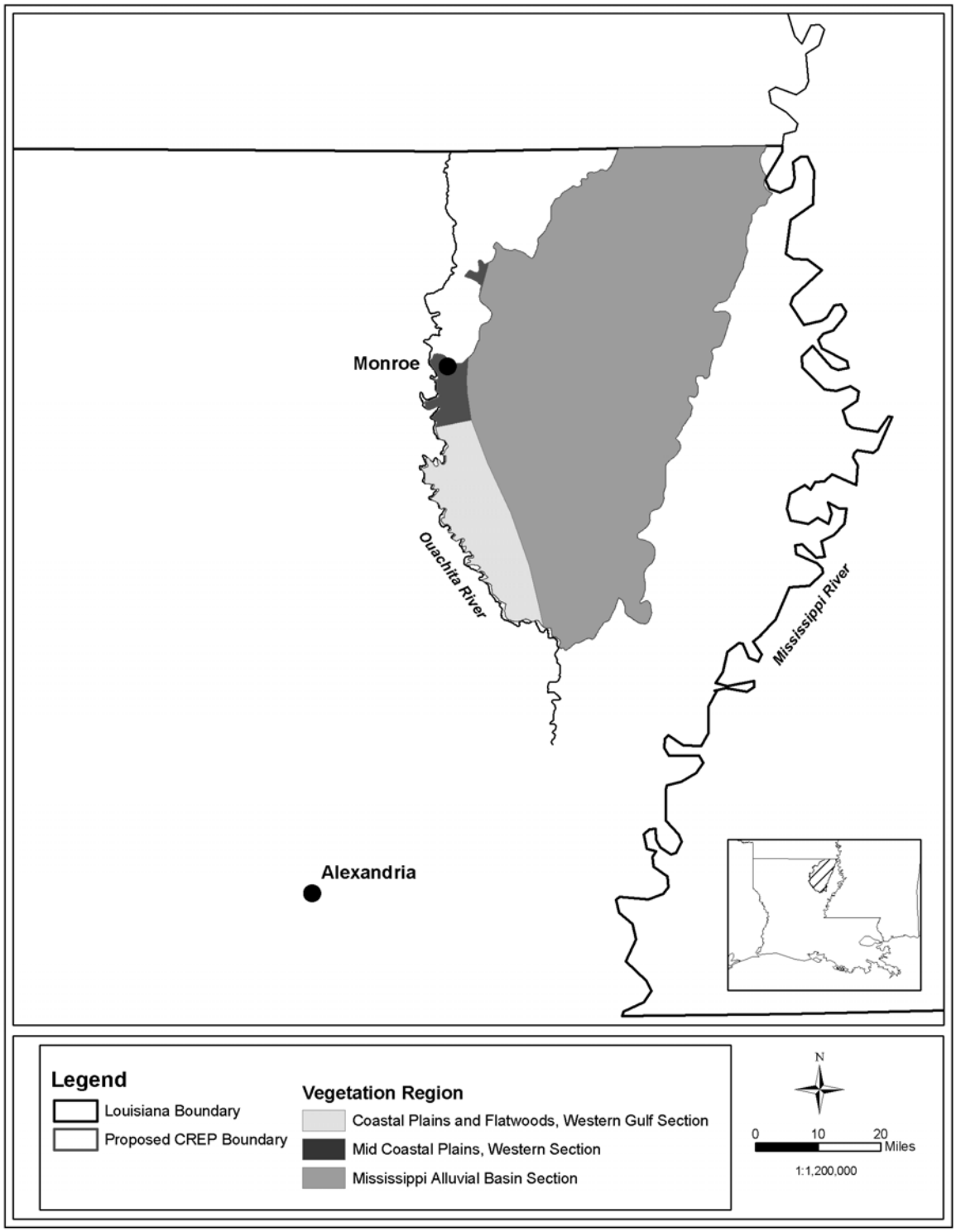
The Region of Influence (ROI) for biological resources is the area encompassed by the proposed Lower Ouachita CREP agreement as well as waters downstream of the proposed CREP area including the Catahoula, Black, Red, and Mississippi Rivers, and the Gulf of Mexico.

3.1.3 Affected Environment

3.1.3.1 Vegetation

The proposed CREP is in the Coastal Plains and Flatwoods, Mid-Coastal Plains, and Mississippi Alluvial Basin Sections of the Mississippi River Alluvial Plain ecoregion. The ecoregion occupies parts of seven states from southern Louisiana to southern Illinois (LNHP 2003a) and includes bottomland hardwoods dominated by oak-gum-cypress forest types (Eyre 1980). The Mississippi River Alluvial Plain is the largest ecoregion in Louisiana and encompasses 12,350 square miles in the historic Mississippi River floodplain. In Louisiana, the Mississippi River Alluvial Plain (Figure 3.1-1) is approximately 15 percent forested and has 12 natural plant communities (LNHP 2003b). These communities include bottomland hardwood forest, calcareous forest, cedar woodland, hardwood slope forest, Jackson calcareous prairie, southern mesophytic forest, cypress-tupelo swamp, mesic hardwood flatwoods, Mississippi terrace prairie, sweetgum-water oak forest, wet hardwood flatwoods, and mixed hardwood-loblolly forest.

Figure 3.1-1 Vegetation Regions of the Proposed CREP Area



Bottomland hardwood forests and cypress swamps, also called forested wetlands, are the dominant natural plant communities in the Mississippi River Alluvial Plain ecoregion. See Table 3.1-1 for species associated with each community. The bottomland hardwood forest includes the sweetgum-water oak community. Cypress-tupelo swamps include bald cypress and tupelo gum as codominant trees. Understory vegetation is usually sparse because of closed canopy conditions and anaerobic soil conditions.

Ten natural plant communities in the proposed CREP area occur in areas of low relief and adjacent uplands. Overstory species include beech, shumard oak, white oak, cow oak, yellow poplar, southern magnolia, American elm, slippery elm, pignut hickory, mockernut hickory, bitternut hickory, white ash, hackberry, sycamore, and loblolly pine. Understory species include hawthorn, sourwood, rattan-vine, persimmon, rough-leaf dogwood, eastern red cedar, spice-bush, paw-paw, and hop-hornbeam. Common grasses include little bluestem, big bluestem, panic grasses, giant cane, and bristle grasses. Common forbs include asters, blazing-stars, tick-seeds, goldenrods, ironweeds, and thoroughworts (see Table 3.1-1).

There are 29 invasive plant species in the proposed CREP area (see Table 3.1-1). Invasive and exotic plant species are a significant threat to the native vegetation in the Lower Ouachita River Basin CREP area and throughout Louisiana.

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Table 3.1-1 Dominant Species in CREP Area Plant Communities

Common Name	Scientific Name
Sweetgum-Water Oak Community	
sweetgum	*Liquidambar styraciflua*
water oak	*Quercus nigra*
sugarberry	*Celtis laevigata*
American elm	*Ulmus americana*
nuttall oak	*Q. nuttallii*
red maple	*Acer rubrum*
red mulberry	*Morus rubra*
greenbrier	*Smilax spp.*
dwarf palmetto	*Sabal minor*
possum haw	*Ilex decidua*
green hawthorn	*Crataegus viridis*
peppervine	*Ampelopsis arborea*
trumpet-creeper	*Campsis radicans*
poison ivy	*Rhus radicans*
Cypress-Tupelo Swamp Community	
bald cypress	*Taxodium distichum*
tupelo gum	*Nyssa aquatica*
swamp blackgum	*N. sylvatica var. biflora*
swamp red maple	*A. rubrum var. drummondii*
black willow	*Salix nigra*
pumpkin ash	*Fraxinus profunda*
green ash	*F. pennsylvanica*
water elm	*Planera aquatica*
water locust	*Gleditsia aquatica*
Virginia willow	*Itea virginica*
buttonbush	*Cephalanthus occidentalis*
Other Communities	
beech	*Fagus grandifolia*
shumard oak	*Q. shumardii*
white oak	*Q. alba*
cow oak	*Q. michauxii*
yellow poplar	*Liriodendron tulipifera*

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Table 3.1-1 Dominant Species in CREP Area Plant Communities (cont'd.)

Common Name	Scientific Name
Other Communities	
southern magnolia	*Magnolia grandiflora*
American elm	*U. americana*
slippery elm	*U. rubra*
pignut hickory	*Carya glabra*
mockernut hickory	*C. tomentosa*
bitternut hickory	*C. cordiformis*
white ash	*Fraxinus americana*
sycamore	*Platanus occidentalis*
loblolly pine	*Pinus taeda*
hawthorn	*Crataegus spp.*
sourwood	*Oyxdendrum arboreum*
rattan-vine	*Berchemia scandens*
persimmon	*Diospyros virginiana*
rough-leaf dogwood	*Cornus drummondii*
eastern red cedar	*Juniperus virginiana*
spice-bush	*Lindera benzoin*
paw-paw	*Asimina triloba*
hop-hornbeam	*Ostrya virginiana*
little bluestem	*Schizachyrium scoparium*
big bluestem	*Andropogon gerardii*
panic grasses	*Panicum spp.*
giant cane	*Arundinaria gigantea*
bristle grasses	*Setaria spp.*
asters	*Aster spp.*
blazing-stars	*Liatris spp.*
tick-seeds	*Coreopsis spp.*
goldenrods	*Solidago spp.*
ironweeds	*Vernonia spp*
thoroughworts	*Eupatorium spp.*

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Table 3.1-1 Dominant Species in CREP Area Plant Communities (cont'd.)

Common Name	Scientific Name
Invasive Plants	
Alligator weed	*Alternanthera philoxeroides*
vinca	*Vinca major*
English ivy	*Hedera helix*
Chinese tallow tree	*Triadica sebiferum*
Chinese lespedeza	*Lespedeza cuneata*
kudzu vine	*Pueraria montana var. lobata*
wisteria	*Wisteria sinensis*
silk tree	*Albizia julibrissin*
chinaberry tree	*Melia azedarach*
Japanese privet	*Ligustrum japonicum*
Chinese privet	*Ligustrum sinense*
giant reed	*Arundo donax*
water hyacinth	*Eichhornia crassipes*
Japanese climbing fern	*Lygodium japonicum*
princess tree	*Paulownia tomentosa*
tree of heaven	*Ailanthus altissima*
sacred bamboo	*Nandina domestica*
Chinese silvergrass	*Miscanthus sinensis*
Nepalese browntop	*Microstegium vimineum*
paper mulberry	*Broussonetia papyrifera*
multiflora rose	*Rosa multiflora*
Japanese honeysuckle	*Lonicera japonica*
climbing yams	*Dioscorea bulbifera*
silverthorn	*Elaeagnus pungens*
autumn olive	*E. umbellata*
shrubby lespedeza	*Lespedeza bicolor*
Brazilian waterweed	*Egeria densa*
camphor tree	*Cinnamomum camphora*
bamboos	*Phyllostachys aurea*

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3.1.3.2 Wildlife

Over 70 species of neotropical migrant songbirds, which are declining significantly as a group, are found in the Mississippi River Alluvial Plain ecoregion (The Nature Conservancy 2003). Some of the species that are of most concern to bird conservationists include Swainson's Warbler, Prothonotary Warbler, American Swallow-tailed Kite, and Wood Thrush. Hooded Mergansers and Wood Duck nest in tree cavities in bottomland hardwoods. The Mallard is the most common wintering waterfowl in the area. Game birds include Woodcock, Mourning Dove, and Eastern Turkey. Barred Owl and Red-shouldered Hawk are common raptors in the area. The proposed CREP area supports numerous rookeries of colonial waterbirds, including herons, egrets, and ibises. Scientific names of animal species mentioned in this text are listed in Table 3.1-2.

Vertebrate richness (number of species) in the proposed CREP area is 39-57 species, which is below the average number of species present in Louisiana. Amphibian and reptile richness is 0-8 species in the eastern half of the area and 9-17 species in the western half of the area. Bird richness is 24-30 species over most of the proposed CREP area, but is among the highest (62-69 species) in the State on small, widely distributed areas. Mammal richness is moderate (11-15 species), but is among the highest (41-46 species) in the State on scattered areas (Hartley et al. 2000).

Beavers, river otter, nutria, mink, and bobcat are important furbearers in the region. Raccoons and opossum are common throughout the proposed CREP area. Primary game animals in the area include white-tailed deer, gray squirrels, waterfowl, and cottontail rabbit (LDWF 2003).

3.1.3.3 Aquatic Species

Common fish species include bowfin, gar, top minnows, yellow bullhead, warmouth, and redfin pickerel. Common frogs and toads include northern cricket frog, spring peeper, gray treefrog, pickerel frog, and American toad. Common snakes include rough green snake, common garter snake, banded water snake, mud snake, and cottonmouth. Common turtles include mud turtles, yellow-bellied slider, common snapping turtle, and box turtle. Rare freshwater mussels and crustaceans that also depend on protection and restoration of high-quality natural habitats include silty hornsnail, ebonyshell, and pine hills crawfish. In general, the aquatic wildlife diversity in southern floodplain forests is high (Martin et al. 1993). Louisiana's coastal waters support approximately 40 percent of the United States' fisheries. During summer months, hypoxia in these the Gulf of Mexico affects more than 5,000 square miles. See Water Resources, Section 3.3 and 4.3, for a discussion of these resources and impacts (EPA 2004).

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Table 3.1-2 Wildlife of the Proposed CREP Area

Common Name	Scientific Name
Mammals	
white-tailed deer	*Odocoileus virginianus*
gray squirrels	*Sciurus carolinensis*
cottontail rabbit	*Syvilagus floridanus*
raccoon	*Procyon lotor*
opossum	*Didelphis virginianus*
beaver	*Castor canadensis*
river otter	*Lutra canadensis*
nutria	*Myocastor coypu*
mink	*Mustela vison*
bobcat	*Lynx rufus*
Birds	
Woodcock	*Philohela minor*
Barred Owl	*Strix varia*
Eastern Turkey	*Meleagris gallopavo silvestris*
Mourning Dove	*Zenaida macroura*
Red-shouldered Hawk	*Buteo lineatus*
Mallard	*Anas platyrhynchos*
Swainson's Warbler	*Limnothlypis swainsonii*
Prothonotary Warbler	*Protonotaria citrea*
American Swallow-tailed Kite	*Elanoides forficatus*
Wood Thrush	*Hylocichla mustelina*
Hooded Merganser	*Agelaius phoeniceus*
Wood Duck	*Aix sponsa*
Reptiles and Amphibians	
mud turtle	*Kinosternon subrubrum*
yellow-bellied slider	*Trachemys scripta*
common snapping turtle	*Chelydra serpentina*
box turtle	*Terrapene carolinina*
rough green snake	*Opheodrys aes*
common garter snake	*Thamnophis sirtalis*
banded water snake	*Nerodia fasciata*
mud snake	*Farancia abacura*

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Table 3.1-2 Wildlife of the Proposed CREP Area (cont'd.)

Common Name	Scientific Name
Reptiles and Amphibians	
cottonmouth	*Agkistrodon piscivo*
cricket frog	*Acris crepitans*
spring peeper	*Hyla crucifer*
gray treefrog	*Hyla versicolor*
pickerel frog	*Rana palustris*
American toad	*Bufo americanus*
Fish	
bowfin	*Amia calva*
gar	*Lepisosteus* spp.
top minnows	*Fundulus* spp. and *Gambusia affinis*
yellow bullhead	*Ictalurus natalis*
warmouth	*Lepomis gulosus*
redfin pickerel	*Esox americanus*

3.1.3.4 Threatened, Endangered, and Sensitive Species

There are six animal species that are listed by the Federal governments as threatened or endangered (Table 3.1-3). The Louisiana black bear is the only mammal listed in the proposed CREP area. Listed bird species include Bald Eagle, Interior of Least Tern, and Red-cockaded Woodpecker. The pallid sturgeon is the only listed fish species and pink mucket pearly mussel is the only listed invertebrate species in the proposed CREP area. There are no threatened or endangered plants in the proposed CREP area.

The Louisiana Natural Heritage Program tracks rare plant and animal species throughout Louisiana. In the proposed CREP area, there are five mammals, seven birds, four reptiles and amphibians, nine fishes, four crustaceans, 13 mollusks, and 53 plant species currently listed (LNHP 2003b). Table 3.1-3 shows these animal species and their current status. Appendix B shows listed plant species and their current status.

There is no designated Critical Habitat in the vicinity of the proposed CREP area.

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Table 3.1-3 Federal and State Status of Threatened and Endangered Species in the Proposed CREP Area

Common Name	Scientific Name	State Rank	Federal Status
Mammals			
Big brown bat	*Eptesicus fuscus*	S1, S2	
Red wolf	*Canis rufus*	SX	
Louisiana black bear	*Ursus americanus luteolus*	S2	T
Ringtail	*Bassariscus astutus*	S?	
Long-tailed weasel	*Mustela frenata*	S2, S4	
Birds			
Golden Eagle	*Aqulla chrysaetos*	S1N	
Bald Eagle	*Haliaeetus leucocephalus*	S2N, S3B	T
Sandhill Crane	*Grus canadensis*	S1N	
Interior Least Tern	*Sternaantillarum athalassos*	S1B	E
Red-cockaded Woodpecker	*Picoides borealis*	S2	E
Bell's Vireo	*Vireo bellii*	SAN, S1B	
Cerulean Warbler	*Dendroica cerulea*	S1B	
Reptiles & Amphibians			
Louisiana slimy salamander	*Plethodon kisatchie*	S1, S2	
Southern prairie skink	*Eumeces septentrionalls*	S1	
Western worm snake	*Carphophis amoenus vermis*	S1	
Alligator snapping turtle	*Macroclemys temminckii*	S3	
Fish			
Pallid sturgeon	*Scaphirhynchus albus*	S1	E
Paddlefish	*Polyodon spathula*	S3	
Steelcolor shiner	*Cyprinella whipplei*	S2, S3	
Bigeye shiner	*Notropis boops*	S3	
Bluehead shiner	*Pteronotropis hubbsi*	S2	
Blue sucker	*Cycleptus elongatus*	S2, S3	
Gulf pipefish	*Syngnathus scove*	S4	
Crystal darter	*Crystallaria asprella*	S2, S3	
Channel darter	*Percina copelandi*	S1, S2	

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Table 3.1-3 Federal and State Status of Threatened and Endangered Species in the Proposed CREP Area (cont'd.)

Common Name	Scientific Name	State Rank	Federal Status
Crustaceans			
Pine hills crawfish	*Fallicambarus dissitus*	S2	
Ouachita fencing crawfish	*Faxonella creaseri*	S2	
A crawfish	*Procambarus elegans*	S2	
Vernal crawfish	*P. viaeviridis*	S2, S3	
Mollusks			
Silty hornsnail	*Pleurocera canaliculata*	S2	
Rabbitsfoot	*Quadrula cyllndrica*	S1	
Monkeyface	*Q. metanevra*	S1	
Ebonyshell	*Fusconaia ebena*	S3	
Pyramid pigtoe	*Pleurobema rubrum*	S2	
White heelsplitter	*Lasmigona complanata*	S1	
Ouachita kidneyshell	*Ptychobranchus occidentalls*	S1	
Mucket	*Actinonaias llgamentina*	SH	
Butterfly	*Ellipsaria lineolata*	S1	
Black sandshell	*Ligumia recta*	S1	
Fatmucket	*Lampsllis siliquoidea*	S1, S3	
Pink mucket pearly mussel	*L. abrupta*	S1	E
Plain pocketbook	*L. cardium*	S1	

E: Federally endangered
T: Federally threatened
S1: Critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it extremely vulnerable to extirpation.
S2: Imperiled in Louisiana because of extreme rarity (6 to 20 known extant populations) or because of some factor(s) making it extremely vulnerable to extirpation.
S3: Rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)
S4: Apparently secure in Louisiana with many occurrences (100 to 1000 known extant populations)
(B or N may be used as a qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding)
SA: Accidental in Louisiana, including species (usually birds or butterflies) recorded once or twice or only at great intervals hundreds or even thousands of miles outside of their usual range
SH: Of historical occurrence in Louisiana, but no recent records verified within the last 20 years; formerly part of the established biota, possibly still persisting.
SX: Believed to be extirpated from Louisiana
S?: Rank uncertain

Source: LNHP 2003b; LDWF 2003

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3.2 CULTURAL RESOURCES

3.2.1 Definition of Resource

Cultural resources consist of prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archaeological resources (prehistoric and historic), architectural resources, and traditional cultural properties. Archaeological resources are locations and objects from past human activities. Architectural resources are those standing structures that are usually over 50 years of age and are of significant historic or aesthetic importance to be considered for inclusion in the National Register of Historic Places (NRHP). Traditional cultural resources hold importance or significance to Native Americans or other ethnic groups in the persistence of traditional culture.

The significance of such resources as defined in to the American Indian Religious Freedom Act, the Archaeological Resources Protection Act, Native America Graves Protection and Repatriation Act, EO 13007, and/or eligibility for inclusion in the NRHP is considered a part of the environmental assessment process. The regulations and procedures in 36 CFR 800, which implements Section 106 of the NHPA, requires Federal agencies to consider the effects on properties listed in or eligible for inclusion in the NRHP. Prior to approval of the proposed action, Section 106 require that the Advisory Council on Historic Preservation be afforded the opportunity to comment.

3.2.2 Region of Influence

The ROI for cultural resources is those lands within the area encompassed by the proposed Ouachita Basin CREP agreement where CPs would be implemented.

3.2.3 Affected Environment

3.2.3.1 Archaeological Resources

Due to its rich cultural history, several thousand prehistoric and historic sites have been recorded in Louisiana. The following reviews the principal prehistoric and historic periods relevant to the overall CREP agreement area.

3.2.3.2 Prehistoric Period

The prehistory of Louisiana is typically divided into three periods – *Paleo-Indian*, *Meso-Indian,* and *Neo-Indian*. As early as 11,000 B.C., Paleo-Indians lived in small nomadic groups that remained in areas where animals and plant foods were plentiful. Paleo-Indians camped near streams in temporary shelters

made of branches, grass, and hides. They also occupied high ground where game could be observed. They raised no animals or crops, did not have metal implements, and used spears tipped with lanceolate stone points made from carefully selected varieties of stone from neighboring regions. Paleo-Indian sites in Louisiana are not common because few artifacts were left at any location. Changing landscape, rising sea levels, and erosion led to the disappearance of sites (Neuman and Hawkins 1993).

By 6000 B.C. the gradual transition from the late Paleo-Indian to the early Meso-Indian period (6000–2000 B.C.) had occurred. Meso-Indians (also called Archaic Indians) lived in small nomadic groups and remained longer in each camp location and exploited smaller geographical areas. Meso-Indians had a varied diet consuming seeds, roots, nuts, fruits, fish, clams, reptiles, amphibians, birds, and mammals. Although population movements were influenced by hunting and gathering seasons, streams were the focus of settlement due to the availability of shellfish and fish. They used fishhooks, traps, and nets, and a spear thrower (atlatl) to kill larger mammals (Neuman and Hawkins 1993). Meso-Indians also collected plants in the spring, fruits in the summer, and acorns, pecans, and walnuts in the fall.

During the ensuing Neo-Indian period (2000 B.C. – A.D. 1600), the population expanded and some groups became sedentary, staying in one place for extended periods. Tools and other objects used by Neo-Indians included stone and pottery vessels, baked clay balls, as well as decorative or ceremonial objects. Neo-Indians also constructed large earthen mounds. The Neo-Indian period included the following cultures: Poverty Point, Tchefuncte, Marksville, Troyville-Coles Creek, Caddo, and Plaquemine-Mississippian (Neuman and Hawkins 1993). A major Neo-Indian period settlement site is Poverty Point, a large earthwork located in West Carroll Parish.

3.2.3.3 Protohistoric and Historic Period

During the period of early Spanish and French exploration, Louisiana was occupied by Caddoan-speaking groups that included the Adaes, Doustioni, Natchitoches, Ouachita, and Yatasi. The territory of these groups stretched from the Ouachita River west to the Sabine River and south to the mouth of Cane River. The earliest contacts with Europeans in Louisiana are poorly documented, however, the best accounts were left by Henri de Tonti who had reached a Natchitoches village in 1690. The Ouachita lived in the Ouachita River basin and by 1720 had completely fused with the Natchitoches. In 1701 Governor Bienville and Louis Juchereau de St. Denis, guided by the Tunica chief Bride les Boeufs or Buffalo Tamer arrived at the Natchitoches area. They visited the Doustioni, Natchitoches, and Yatasi villages in attempt to obtain livestock and salt for French settlements in lower Louisiana. After St. Denis returned to Red River in 1714, the Caddoan people in Louisiana were in regular contact with European immigrants (Webb and Gregory 1990).

Beginning in 1541 with Hernando de Soto's claim of the region for Spain, Louisiana has been governed under 10 different flags. Louisiana was at one time or another a subject of Great Britain, France,

Republic of West Florida, and the United States. At the outbreak of the Civil War, Louisiana became an independent republic for six weeks before joining the Confederacy. In 1803, Louisiana had become a part of the United States because of the region's importance to the trade and security of the American Midwest. New Orleans and the surrounding territory controlled the mouth of the Mississippi River upon which produce from the Midwest was transported to markets. To obtain American control over this vast territory, in 1803 President Thomas Jefferson negotiated the Louisiana Purchase with Napoleon. With the acquisition of Louisiana, Jefferson nearly doubled the size of the United States and made it a world power. Thirteen states or parts of states were eventually carved out of the Louisiana Purchase territory (Louisiana Department of Economic Development 1994).

Through much of its early history, Louisiana was a trading and financial center. The fertility of its land also made it one of the richest agricultural regions in America as first indigo, then sugar and cotton, rose to prominence in world markets. Many Louisiana planters were among the wealthiest men in America. However, the plantation economy was shattered by the Civil War although the state continued to be a powerful agricultural region. The discovery of sulphur in 1869 and oil in 1901, coupled with the rise of forestry sent the state on a new wave of economic growth. Eventually, Louisiana became a major American producer of oil and natural gas and a center of petroleum refining and petrochemicals manufacturing (Louisiana Department of Economic Development 1994).

3.2.3.4 Archaeological Sites

Three archaeological sites are listed on the NRHP within the CREP area counties Table 3.2-1. The Poverty Point National Historic Landmark in West Carroll Parish is the largest and most complex ceremonial earthwork in North America, and the largest community of the first millennium B.C. known in the United States. Many other archaeological sites whose NRHP eligibility has not been determined are found throughout rural areas encompassed by the CREP agreement.

Historic period (1750-present) archaeological sites include both Native American and non-Native American sites. European traders, settlers, soldiers, and missionaries, encountered and interacted with the aforementioned Native groups. Historic archaeological sites may represent areas of large settlements or individual plantation, or residences, remnants of transportation systems, or other early industrial activities, educational, religious, social, or commercial structures, ditches, dams or refuse dumps, and cemeteries or family burial plots.

Table 3.2-1 NRHP Listed Archaeological Sites located in CREP Area Counties

County	NRHP Listed Sites
Caldwell	1
East Carroll	0
Franklin	0
Madison	1
Morehouse	0
Ouachita	0
Richland	0
Catahoula	0
West Carroll	1
Total	**3**

Source: Louisiana Division of Historic Preservation, NRHP Database (November 20, 2003 http://www.crt.state.la.us/nhl2/default.htm

3.2.3.5 Historic Architectural Resources

Louisiana historic architectural resources include historic buildings such as plantation houses, courthouses or log cabins, historic structures such as old bridges, lighthouses or forts; and historic districts such as old residential or commercial neighborhoods. Eight historic districts and 77 individual properties are listed in the NRHP within the CREP agreement area (Table 3.2-2).

Table 3.2-2 Numbers of NRHP Listed Historic Districts and Individual Historic Properties in CREP Area Counties

	NRHP Listed Historic Districts	NRHP Listed Properties
Caldwell	1	7
East Carroll	2	3
Franklin	2	4
Madison	0	11
Morehouse	0	7
Ouachita	2	27
Richland	0	9
Catahoula	1	9
West Carroll	0	0
Total	**8**	**77**

Source: Louisiana Division of Historic Preservation NRHP Database (November 20, 2003).
http://www.crt.state.la.us/nhl2/default.htm

3.2.3.6 Traditional Cultural Properties

A traditional cultural property is defined as a property that is eligible for inclusion in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. Traditional cultural properties may be difficult to recognize and may include a location of a traditional ceremonial location, a mountaintop, a lake, or a stretch of river, or culturally important neighborhood. (U.S. Department of the Interior 1998).

Federally recognized tribes with traditional ties to Louisiana include the Alabama-Coushatta Tribe of Texas, the Caddo Tribe of Oklahoma, the Chitimacha Tribe of Louisiana, the Jena Band of Choctaw Indians, the Mississippi Band of the Choctaw, the Quapaw Tribe of Oklahoma, and the Tunica-Biloxi Indians of Louisiana (Federal Register 2002). The Louisiana Division of Historic Preservation does not maintain a list of traditional cultural properties within the state.

3.3 WATER RESOURCES

3.3.1 Definition of Resource

The CWA is the primary Federal law that protects the nation's waters including lakes, rivers, aquifers, wetlands, and coastal areas. For this analysis, water resources include surface water, impaired waters, groundwater, wetlands, and floodplains. Surface water includes streams and rivers. Impaired waters are defined by the Environmental Protection Agency (EPA) as those surface waters with levels of pollutants that exceed state water quality standards. Every two years, states must publish lists of impaired waters, those that do not meet their designated uses because of excess pollutants (EPA 2004b). Wild and Scenic Rivers are addressed is Sections 3.6 and 4.6, Recreational Resources.

Groundwater refers to subsurface hydrologic resources, such as aquifers, that are used for domestic, agricultural and industrial purposes. For this analysis, groundwater includes sole source aquifers. Wetlands are defined by the U.S. Army Corps of Engineers (COE) as areas that are characterized by a prevalence of vegetation adapted to saturated soil conditions. Wetlands can be associated with groundwater or surface water and are identified based on specific soil, hydrology, and vegetation criteria defined by the COE. For this analysis, floodplains will be defined as 100 year floodplains, designated by the Federal Emergency Management Agency (FEMA) as those low lying areas that are subject to inundation by a 100-year flood, a flood that has a 1 percent chance of being equaled or exceeded in any given year.

3.3.2 Region of Influence

The ROI for water resources includes the surface water, ground water, wetlands, and floodplains in the area encompassed by proposed Ouachita CREP agreement including the Ouachita River, the waters downstream of the area, and aquifers that underlie the area.

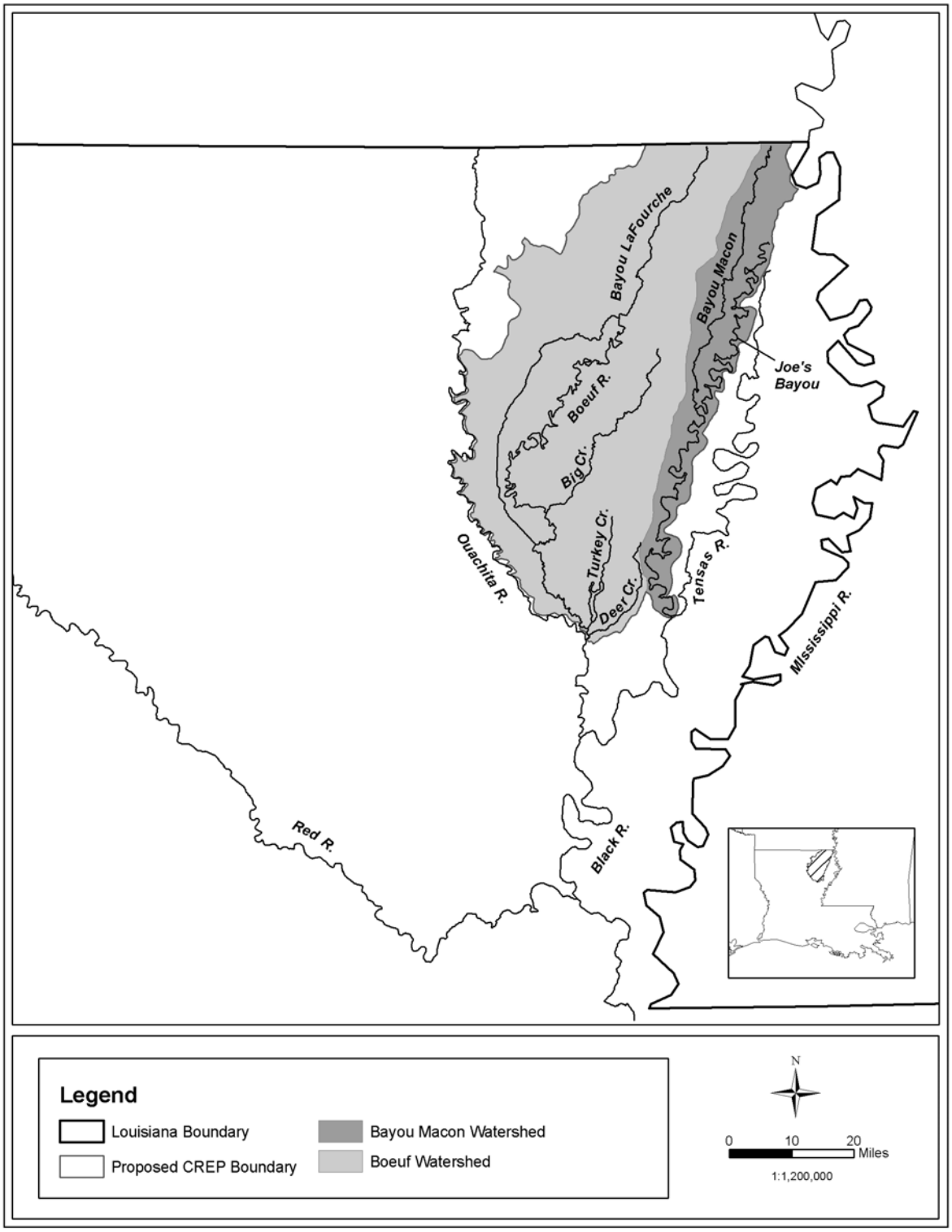
3.3.3 Affected Environment

3.3.3.1 Surface Water

The Ouachita River originates in the Ouachita Mountains of Arkansas near the Okalahoma border. It flows roughly 605 miles to its confluence with the Catahoula River near Trinity, Louisiana where the two rivers form the Black River, a tributary of the Red River which drains into the Mississippi. The proposed Louisiana CREP area is contains portions of two watersheds: Bayou Macon and Bouef (EPA 2004b). The Bayou Macon Watershed covers the eastern portion of the CREP area and the Bouef Watershed, the western. In the Bayou Macon watershed, Bayou Macon and Jones Bayou converge into the Catahoula River. In the Boeuf Watershed Deer Creek, Turkey Creek, the Boeuf River, Big Creek, and Bayou LaFourche all empty into the Ouachita River at the southernmost portion of the watershed. Figure 3.3-1 illustrates the surface waters and watersheds of the proposed CREP area.

The surface waters in the CREP area drain ultimately into the Gulf of Mexico, where hypoxia (oxygen levels of less than two parts per million) affects an average of over 5,000 square miles from late fall through late summer. Hypoxia is caused by an overabundance of nutrients which trigger excessive algae growth or blooms. These blooms result in less sunlight penetrating waters. Without adequate light, plants die off and decompose, ultimately resulting in decreased levels of dissolved oxygen and loss of plankton, shellfish and fish (EPA 2004c). The Mississippi River basin, which drains 41 percent of the conterminous United States, annually discharges 950,000 metric tons of nitrate and 137,000 metric tons of phosphorous into the Gulf of Mexico. The largest source of these nutrients is agricultural activity, but point sources, urban runoff, and atmospheric deposition also contribute (NOAA 1999).

Figure 3.3-1 Water Resources in the Proposed CREP Area



3.3.3.2 Impaired Waters

Table 3.3-1 lists those designated impaired waters in the Bayou Macon and Boeuf River Watersheds (EPA 2004b). There are two impaired waters in the Bayou Macon Watershed. In the Boeuf River Watershed, there are ten impaired waters. Impairments in both watersheds include pesticides, nutrients, suspended solids, organic enrichment/low dissolved oxygen, pathogens and turbidity. Pesticides, organic enrichment/low dissolved oxygen, and elevated nutrient levels can result from runoff from cropland, pastureland, livestock operations, orchards and nurseries, landfills, and lawns and gardens. Possible sources of pathogens include domestic sewage, livestock waste, and landfills. Turbidity and suspended solids result from runoff and erosion.

Table 3.3-1 List of Impaired Waters in the Proposed CREP Area

Water Body Name	Location	Impairments
Bayou Macon Watershed		
Bayou Macon	Arkansas State Line to Catahoula River	• Pesticides • Nutrients • Pathogens • Suspended Solids • Turbidity • Organic Enrichment/Low Dissolved Oxygen
Joe's Bayou	Headwaters to Bayou Macon	• Pesticides • Nutrients • Suspended Solids • Organic Enrichment/Low Dissolved Oxygen
Boeuf River Watershed		
Bayou Bonne Idee	Headwaters to Boeuf River	• Pesticides • Nutrients • Phosphorus • Nitrogen • Suspended Solids • Organic Enrichment/Low Dissolved Oxygen
Bayou Lafourche	All	• Pesticides • Priority Organics • Mercury • Nutrients • Pathogens • Suspended Solids • Turbidity • Organic Enrichment/Low Dissolved Oxygen

1

Table 3.3-1 List of Impaired Waters (cont'd.)

Water Body Name	Location	Impairments
Bayou Lafourche	Near Oakridge to Boeuf River	No data available
Big Creek	Headwaters to Boeuf River	• Pesticides • Phosphorus • Nitrogen • Salinity/TDS/Chlorides • Suspended Solids • Turbidity • Organic Enrichment/Low Dissolved Oxygen
Boeuf River	Arkansas State Line to Ouachita River	• Pesticides • Mercury • Phosphorus • Nitrogen • Salinity/TDS/Chlorides • Suspended Solids • Turbidity • Ammonia • Organic Enrichment/Low Dissolved Oxygen
Clear Lake	All	• Pesticides • Nutrients • Pathogens • Suspended Solids • Organic Enrichment/Low Dissolved Oxygen
Crew Lake	All	• Pesticides
Tisdale Break/Staulkinghead Creek	From Origin to Little Bayou Boeuf	• Dioxins
Turkey Creek	Headwaters to Turkey Creek Cutoff and Turkey Creek Cutoff to Big Creek	• Pesticides • Other Organics • Pathogens • Suspended Solids • Turbidity • Ammonia
Wham Break (within 080904)	All	No data available

Source: EPA 2004b

3.3.3.3 Groundwater

The CREP area is underlain by the Middle Claiborne Aquifer, one of six aquifers of the Mississippi Embayment Aquifer System. The late Cretaceous to middle Eocene aged aquifer system consists of interbedded, poorly consolidated fluvial, deltaic, and marine deposits. Typical well yields range from 100 to 300 gallons per minute. At the junction of the Mississippi and Ouachita Rivers, dissolved solid concentrations may be as high as 1,000 milligrams per liter. The aquifer is not considered polluted (FSA 2004). Such highly mineralized water is considered to be unsuitable for most purposes. A surficial aquifer, the Mississippi Valley Alluvial Aquifer also underlies the CREP area. Like the Middle Claiborne Aquifer, this Quaternary aged aquifer is composed of alluvial and deltaic deposits. In general, groundwater is contained under unconfined conditions and is hydraulically connected with the Middle Claiborne Aquifer. Recharge is by precipitation or upward flows from the underlying aquifer. Though long-term decline in water levels in some areas has diminished aquifer thickness, well yields of 500 gallons per minute are common in the Mississippi River Valley Alluvial Aquifer, and some irrigation wells yield as much as 5,000 gallons per minute. The quality of water is generally suitable for most uses (USGS 1997).

3.3.3.4 Wetlands

The 1987 COE Wetland Delineation Manual (USACE 1987) specifies three criteria for the identification of wetlands including hydrophytic vegetation, hydric soil, and positive indicators of wetland hydrology. Wetlands are defined by the EPA and the COE as:

> "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas." (33 CFR 3283 (b) 1984)

National Wetland Inventory (NWI) data are not available in digital format for the CREP area, therefore, no acreages are available. Hard copies of NWI maps are available from the USFWS (USFWS 2004).

3.3.3.5 Floodplains

Floodplains are areas of low-lying land that are subject to inundation by the lateral overflow of water from the bodies of water with which they are associated. EO 11988, Floodplain Management, requires that Federal agencies

> "take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains."

Accordingly, agencies must review FEMA floodplain maps to determine whether a proposed action is located in or will impact 100- year floodplains. FEMA floodplain data is not available digitally for the proposed CREP area, however, hard copies of floodplain maps can be obtained from FEMA (FEMA 2004).

3.4 EARTH RESOURCES

3.4.1 Definition of Resource

For this analysis, earth resources are defined as topography and soils. Topography describes the elevation and slope of the terrain, as well as other visible land features. Soils are assigned to taxonomic groups and can be further classified into association.

3.4.2 Region of Influence

The ROI for earth resources includes the area proposed for enrollment in Ouachita River CREP agreement.

3.4.3 Affected Environment

3.4.3.1 Topography

The proposed Ouachita River CREP area is located within the Mississippi River alluvial plain. It is an area of broad, nearly level to gently sloping floodplains and low terraces on unconsolidated alluvial material. Relief is generally less than 15 meters, although terraces and natural levees may rise several meters above the adjacent bottomlands. Swamps and bottomland hardwood forests cover large areas, even though much of the floodplain has been cleared for agriculture. There are many sloughs and oxbow lakes, and streams meander widely.

3.4.3.2 Soils

The Lower Ouachita River drainage basin is comprised of soil series that are similar in composition, thickness, and arrangement. The western portion of the proposed CREP area consists of loess deposits and upland terraces and is dominated by deep, medium textured and fine textured soils that have mostly mixed mineralogy. The medium textured Sterlington and Rilla series occupy higher positions on natural levees and the Herbert series occupy lower positions on the natural levees. The fine textured Perry and Portland series occupy backswamp areas. A small area in the western portion of the CREP area is dominated by the Ruston series, the Louisiana state soil series.

The eastern portion of the proposed CREP area is recent alluvium, and most of the soils are deep, medium textured soils that have a mixed mineralogy. Well drained, nearly level to very steep Memphis series are on uplands. Moderately well drained, nearly level to strongly sloping Grenada and Loring series are on ridgetops, side slopes, and terraces. Poorly drained Calhoun and Gilbert series are on broad flats and swales on terrace uplands. Well drained Ouachita series soils and poorly drained Guyton series are on the flood plains. Fine textured Perry, Portland, Sharkey, and medium textured Commerce and Rilla series occupy backswamp areas and older natural levees (ESSC 2004).

3.5 AIR QUALITY

3.5.1 Definition of Resource

The CAA requires the maintenance of National Ambient Air Quality Standards (NAAQS). NAAQS, developed by EPA to protect public health, establish limits for six criteria pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), lead (Pb), and respirable particulates (particulate matter less than 10 microns in diameter [PM_{10}]). The CAA requires states to achieve and maintain the NAAQS within their borders. Each state may adopt requirements stricter than those of the national standard. Each state is required by EPA to develop a State Implementation Plan that contains strategies to achieve and maintain the national standard of air quality within the state. Areas that violate air quality standards are designated as nonattainment areas for the relevant pollutants. Areas that comply with air quality standards are designated as attainment areas for relevant pollutants.

3.5.1 Region of Influence

The ROI for this air quality analysis includes the Air Quality Control Region (AQCR) #019 which encompasses the parishes of the proposed CREP area.

3.5.2 Affected Environment

The Louisiana Department of Environmental Quality (LDEQ) Environmental Evaluation Division, Air Analysis Section, monitors the air quality in the state of Louisiana. The LDEQ maintains 44 monitoring stations throughout the state that collect data on the following criteria pollutants: O_3, SO_2, NO_2, CO, Pb, and PM_{10}. The LDEQ monitors trends in the air quality and ensures compliance with NAAQS.

The LDEQ reports the daily Air Quality Index (AQI), an approximate indicator of overall air quality, to the public through the daily weather report and on their website. The AQI converts concentrations of all criteria air pollutants into one normalized number (0 – 500) that depicts the air quality for the area. The AQI categories are: good (0 – 50); moderate (51 – 100); unhealthy for sensitive groups (101 – 150);

unhealthy (151 – 200); very unhealthy (201 – 300); and hazardous (301 – 500). The overall air quality in Louisiana is good and all parishes within the ROI are in attainment of NAAQS (DEQ 2003 and Walton 2004).

3.6 RECREATIONAL RESOURCES

3.6.1 Definition of Resource

Recreational resources are those activities or settings either natural or manmade that are designated or available for recreational use by the public. In this analysis, recreational resources include lands and waters utilized by the public for hunting, fishing, hiking, birding, canoeing and other water sports, and related activities.

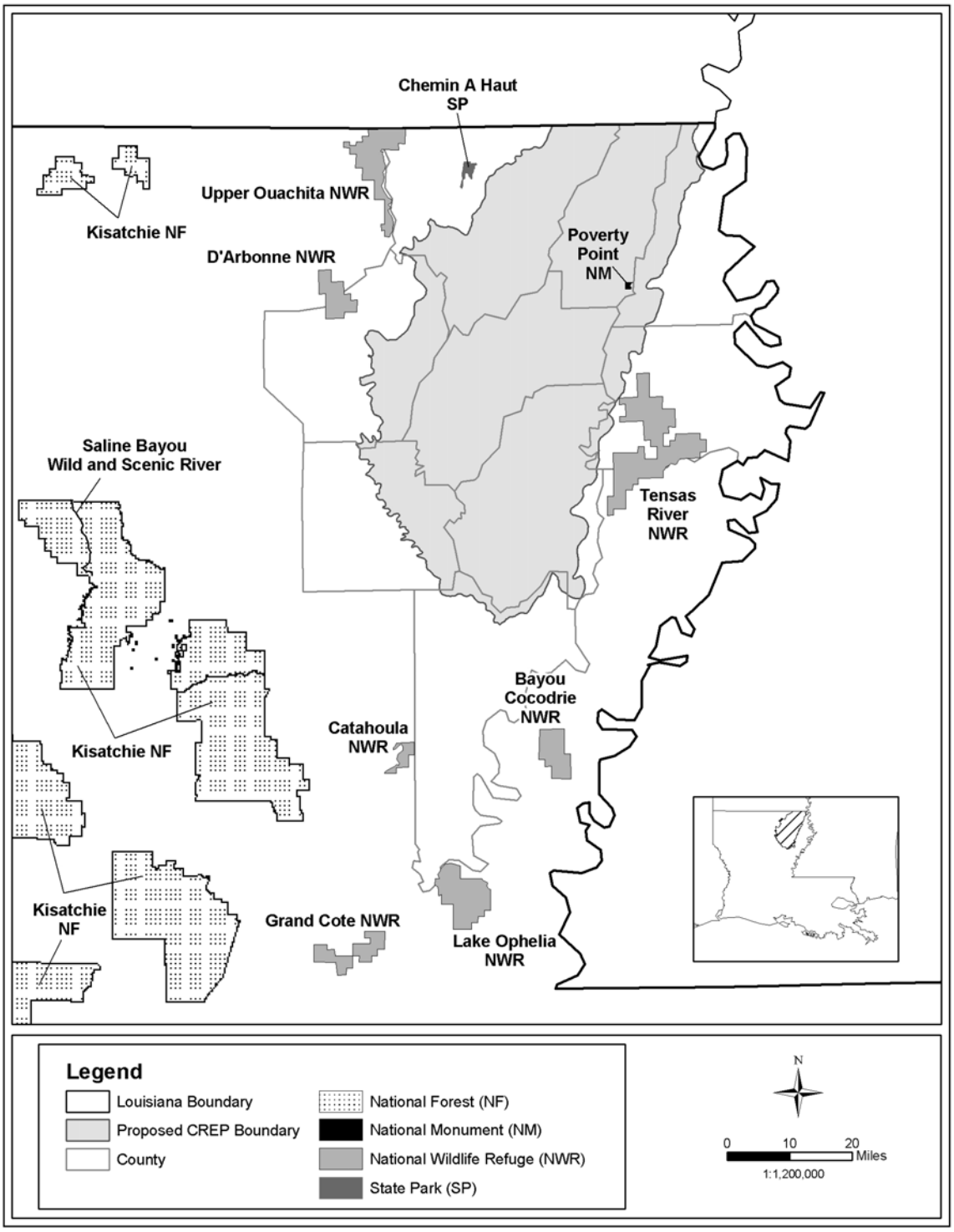
3.6.2 Region of Influence

The ROI for recreational resources includes the lands proposed for enrollment in the Ouachita River Basin CREP agreement, adjacent lands, as well as bodies of water that lie in and downstream of the CREP area.

3.6.3 Affected Environment

Because the lands that could be enrolled in CREP are privately held, access to these lands for recreation is controlled by landowners. However, there are public lands available for recreation within and immediately adjacent to the proposed CREP area. Figure 3.6-1 shows Federal and state recreational lands in the vicinity of the proposed CREP area. Poverty Point National Monument, a National Historic Landmark, in West Carroll Parish is the only such land in the CREP area. Tensas River, Bayou Cocodrie, Lake Ophelia, Grand Cote, Catahoula, Upper Cuachita, and D'Arbonne National Wildlife Refuges; Kisatchie National Forest, Chemin A. Haut State Park, and Saline Bayou Wild and Scenic River lie near the proposed CREP area. These public lands provide recreational activities such as hunting, hiking, camping, fishing, biking, and backpacking. Hunting and fishing require state issued licenses for both public and private lands. The economics of recreational activities can be found in Sections 3.7 and 4.7, Socioeconomics. Important fish and game species are discussed in Sections 3.1 and 4.1, Biological Resources. Water quality is discussed in Sections 3.3 and 4.3, Water Resources.

Figure 3.6-1 State and Federal Recreational Lands in the Proposed CREP Area



3.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.7.1 Definition of Resource

For this analysis, socioeconomics includes investigations of farm and non-farm employment and income, farm production expenses and returns, and agricultural land use.

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires a Federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low income populations." A minority population can be defined by race, by ethnicity, or by a combination of the two classifications.

According to CEQ, a minority population can be described as being composed of the following groups: American Indian or Alaska Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic, and exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ 1997). The U.S. Census Bureau (USCB) defines ethnicity as either being of Hispanic origin or not being of Hispanic origin. Hispanic origin is further defined as "a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin regardless of race" (USCB 2001).

Each year the USCB defines the national poverty thresholds, which are measured in terms of household income and are dependent upon the number of persons within the household. Individuals falling below the poverty threshold are considered low-income individuals. USCB census tracts where at least 20 percent of the residents are considered poor are known as poverty areas (USCB 1995). When the percentage of residents considered poor is greater than 40 percent, the census tract is considered an extreme poverty area.

3.7.2 Region of Influence

The ROI for analysis of impacts to socioeconomics or environmental justice is those parishes where lands eligible for enrollment in the proposed CREP are located.

3.7.3 Affected Environment

3.7.3.1 Demographic Profile

The total population within the ROI was 277,458 people in 2000, which was an approximately 1.9 percent increase over the population of 1990 (U.S. Census Bureau [USCB] 1993, 2003). The majority of the

population (58.0 percent) was located within urban areas or urban clusters (USCB 2003). Only 1.6 percent of the total population was located on farms. This was a decrease of approximately 82.9 percent from the 1990 farm population (USCB 1993).

Demographically the ROI population was 62.0 percent White, non-Hispanic; 35.8 percent Black or African American, non-Hispanic; 0.2 percent Native American or Alaska Native, non-Hispanic; 0.4 percent Asian, non-Hispanic; 0.01 percent Native Hawaiian or Pacific Islander, non-Hispanic; 0.7 percent all other races or combination of races, non-Hispanic; and 1.0 percent Hispanic (USCB 2003). The total minority population within the ROI was 105,563 or 38.0 percent of the total ROI population (USCB 2003). The ROI is not a location of a concentrated minority population.

In 1997, Hispanics operated 11 farms within the ROI; Black or African Americans operated 128 farms; and Native Americans operated 9 farms (USDA 1999). The ROI accounts for 10.7 percent of all minority farm operators within the state of Louisiana, while these 148 farms account for 4.1 percent of the total number of farms within the ROI (USDA 1999).

3.7.3.2 Non-Farm Employment and Income

Between 1990 and 2002 the non-farm labor force within the ROI ranged from 113,566 in 1990 to 128,305 in 2001 (Bureau of Labor Statistics [BLS] 2004). Non-farm employment also ranged during this period from a low of 104,777 positions in 1990 to a high of 117,891 positions in 2001 (BLS 2004). The unemployment rate within the ROI varied from a high of 9.97 percent in 1994 to a low of 6.46 in 1999 (BLS 2004). Within the ROI, East Carroll Parish has experienced the highest average non-farm unemployment rate for the period (16.30 percent), with the highest rate occurring in 1994 (18.8 percent) (BLS 2003).

Median household income in 1999 ranged within the ROI, the highest median household income occurring in Ouachita Parish ($32,047) and the lowest median household income occurring in Madison Parish ($20,509) (USCB 2003). The average poverty rate for the ROI in 2000 was 24.3 percent, a decrease of approximately 5.4 percent from the 1990 poverty rate (USCB 1993, 2003). The 2000 poverty rate varied from a high of 40.5 percent in East Carroll Parish to a low of 20.7 percent in Ouachita Parish (USCB 2003). All parishes within the ROI would be considered poverty areas and East Carroll Parish would be considered an extreme poverty area.

3.7.3.3 Farm Employment and Income

In 1997, there were 8,358 farm workers on 1,590 farms within the ROI accounting for a payroll of $37.5 million (USDA 1999). Table 3.7-1 lists the hired farm and contract labor costs per county within the ROI and labor costs as a percentage of total production costs. In 1997, 3,098 farms within the ROI had sales

less than $250,000 classifying them as small farms, while 556 large farms had sales greater than $250,000 (USDA 1999). Realized net farm income was in excess of $98.7 million in 2000, which was a 41.3 percent decrease compared to the 1992 realized net farm income (Bureau of Economic Analysis [BEA] 2003). Total government payments to farms within the ROI exceeded $156.6 million in 2000, an increase of 37.3 percent over the 1992 government payments to farms within the ROI (BEA 2003). Farm proprietor's income within the ROI in 2000 exceeded $46.8 million, while farm wages and perquisites was approximately $36.9 million (BEA 2003). This accounted for a decrease of 47.9 percent in farm proprietor's income from the 1992 figures and an increase of 17.7 percent for farm wages and perquisites (BEA 2003).

Table 3.7-1 Farm Labor as a Percentage of Total Production Expenses

Area	1997				1992			
	Hired Farm Labor ($000)	Contract Labor ($000)	Total Production Expenses ($000)	Labor as a Percent of Total Production Expenses	Hired Farm Labor ($000)	Contract Labor ($000)	Total Production Expenses ($000)	Labor as a Percent of Total Production Expenses
Louisiana	163,558	12,440	1,466,483	12.0	146,667	11,560	1,309,012	12.1
Caldwell	936	72	8,642	11.7	978	183	9,313	12.5
Catahoula	2,840	331	32,630	8.5	2,689	315	83,644	9.7
East Carroll	5,443	246	42,990	13.2	4,761	326	44,931	11.3
Franklin	7,796	587	63,308	13.2	4,618	625	53,231	9.9
Madison	4,605	260	48,632	10.0	4,205	396	42,197	10.9
Morehouse	5,947	617	54,871	12.0	6,621	560	57,743	12.4
Ouachita	2,187	208	21,582	11.1	1,709	95	15,492	11.6
Richland	3,722	428	44,009	9.4	4,207	662	49,412	9.9
West Carroll	4,049	493	30,675	14.8	2,795	218	25,472	11.8

Source: USDA 1999

3.7.3.4 Farm Production Expenses and Returns

In 2000, farm production expenses exceeded $519.9 million within the ROI an increase of 5.5 percent over 1992 (BEA 2003). Using the 1997 acreage in active farm production (1,680,370acres), the average cost per acre within the ROI in 1997 was $328.67 (USDA 1999; BEA 2003). Using 1997 cropland, the cost per acre of agricultural chemicals inputs, including fertilizers and lime, was $121.86 (USDA 1999). Average net cash return per farm within the ROI was $29,605 in 1997 (USDA 1999). The average net cash receipts per acre within the ROI in 1997 were $53.75 (USDA 1999). Table 3.7-2 lists the average farm production expenses and return per dollar of expenditure from 1997 within each of the counties

within the ROI. Table 3.7-3 lists the average value of land and buildings and the average value of machinery and equipment per farm within each of the counties within the ROI.

Table 3.7-2 Average Farm Production Expense and Return Per Dollar of Expenditure (1997)

Area	Average Size of Farm (acres)	Average Total Farm Production Expense	Average Cost Per Acre	Average Net Cash Return/Farm	Average Net Cash Return/Acre	Average Return/ $ Expenditure
Louisiana	331	61,532	186	20,032	60.52	0.33
Caldwell	324	39,824	123	12,013	37.08	0.30
Catahoula	600	85,868	143	22,636	37.73	0.26
East Carroll	862	176,915	205	70,165	81.40	0.40
Franklin	367	86,605	236	28,540	77.77	0.33
Madison	955	174,937	183	39,814	41.69	0.23
Morehouse	642	136,494	213	44,830	69.83	0.33
Ouachita	236	57,400	243	7,237	30.67	0.13
Richland	490	91,304	186	21,360	43.59	0.23
West Carroll	310	56,911	184	19,846	64.02	0.35

Source: USDA 1999

Table 3.7-3 Average Value per Farm of Land and Buildings and Machinery and Equipment

Area	Average Size of Farm (acres)	Average Value of Land & Buildings	Average Value of Machinery & Equipment
Louisiana	331	380,871	59,330
Caldwell	324	281,975	49,937
Catahoula	600	409,172	85,181
East Carroll	862	797,024	175,428
Franklin	367	328,284	62,321
Madison	955	776,953	160,057
Morehouse	642	625,971	138,979
Ouachita	236	279,946	67,946
Richland	490	494,245	95,856
West Carroll	310	235,289	56,727

Source: USDA 1999

3.7.3.5 Current Agricultural Land Use Conditions

In 1997, 1.70 million acres of land within the ROI were actively used for agricultural purposes including cropland, hay land, and pastureland, this was an increase of approximately 2.8 percent from the 1992 figures (1.65 million acres) (USDA 1999). Table 3.7-4 lists the acreage for different agricultural land uses in 1992 and 1997 and the percent change during the period. Active conservation programs acreage for all program years (1986-2005) included 111,015 acres (active CRP), 5,638 acres (continuous non-CREP), 17,533 acres (Wetland Reserve Program [WRP]), 252 acres (marginal pastures), and 85,466 acres (tree practices) within the ROI.

Table 3.7-4 Agricultural Land Use Acreage within the ROI

Land Use	1997	1992	Percent Change
Cropland[1]	1,372,457	1,377,828	(0.4)
Hay land[2]	34,369	29,257	17.5
Pastureland[3]	173,901	167,531	3.8
Woodland[4]	99,643	79,072	26.0
House lots, ponds, roads, wasteland, etc.	116,021	58,554	98.1
CRP & WRP[5]	59,724	27,152	120.0
Active Agriculture[6]	1,680,370	1,653,688	1.6
Total Land in Farms[7]	1,795,747	1,712,242	4.9

[1] Cropland excludes all harvested hayland and cropland used for pasture or grazing
[2] Hay land includes all harvested cropland used for alfalfa, other tame, small grain, wild, grass silage, green chop, etc.
[3] Pastureland includes all pasture, including cropland, grazed woodland, and rangeland not considered cropland or woodland
[4] Woodland excludes all wooded pasture lands
[5] CRP & WRP acreages are included as active agricultural lands
[6] Active agricultural lands include the sum of cropland, hay land, and pastureland
[7] Total land in farms include the sum of cropland, hay land, pastureland, woodland, and house lots, etc.

Source: USDA 1999

3.7.3.6 Recreational Values

An analysis of the 1996 and 2001 National Surveys of Fishing, Hunting, and Wildlife Associated Recreation (USFWS 1997, 2002) indicated that total participants in wildlife related recreation increased approximately 4.3 percent to 1.3 million persons between 1996 and 2001 in Louisiana. Total expenditures for wildlife-related recreation activities was approximately $1.6 billion in 2001, a 8.4 percent decline over 1996 (USFWS 1997, 2002). Total expenditures for hunting related activities in Louisiana declined 22.7 percent to $446.2 million in 2001, while sport fishing expenditures declined 14.7 percent to $703.3 million (USFWS 1997, 2002). Wildlife viewing expenditures declined 15.2 percent to $168.4 million in 2001 (USFWS 1997, 2002).

4.0 ENVIRONMENTAL CONSEQUENCES

Potential environmental consequences are determined first by understanding the existing conditions in the affected environment. Analyzing potential impacts involves evaluating the conditions of the existing environment (Chapter 3) and using the details of the proposed action and alternatives (Chapter 2).

4.1 BIOLOGICAL RESOURCES

4.1.1 Alternative A - Preferred

Implementation of Alternative A would result in long term beneficial impacts to biological resources in the proposed CREP area and the waters downstream from the area. The agricultural land eligible for enrollment in the proposed CREP area consists of previously disturbed and extensively managed landscapes. Vegetation; wildlife; and threatened, endangered, and sensitive species have been displaced from years of crop production on these lands. Short term, minor impacts could occur as a result of the practices used to install the CPs.

Implementation of CPs for the 15 year projected duration of the proposed CREP would restore water quality and 24,400 acres of wetlands to improve habitat for aquatic species; establish 4,700 acres of riparian buffers as important travel routes for wildlife; establish 620 acres of permanent wildlife habitat; reforest 16,700 acres; and remove from crop production and additional 3,540 acres for establishing permanent native grasses, wildlife food plots, and vegetated filter strips. Implementation of these CPs would improve the habitats for threatened, endangered, and sensitive species in the proposed CREP area.

4.1.1.1 Vegetation

Every CP that is proposed for implementation under the Ouachita CREP agreement would contribute to vegetation diversity and increase the distribution of plant species in the proposed CREP area. In particular, establishment of permanent native grasses (CP2), hardwood tree planting (CP3A), and riparian buffers (CP22) would benefit vegetation resources in the CREP area. These efforts would stimulate the development of natural vegetative communities in the riparian areas and adjacent uplands. Establishment of native plant communities, as specified under CREP, would help to reduce occurrences of invasive and exotic plant species. The monitoring activities conducted as part of each CP would include management measures to prevent invasive and exotic plants from reducing the success of planting efforts. Invasive and exotic plants generally thrive in disturbed areas. Intact natural environments, such as those that would be created under CREP are least vulnerable to non-native species. In addition, elimination of invasive and exotic plants from project areas would help to ensure that CREP program goals are being

accomplished. Vegetation restoration would increase biodiversity and improve water quality throughout the 50,000 acres proposed for enrollment. See Section 4.3 for a discussion of water quality impacts.

4.1.1.2 Wildlife

Associated with improved habitat conditions, wildlife diversity would increase from implementation of the proposed CREP agreement. In comparison to the existing conditions on most of the eligible cropland, wildlife habitat and wildlife diversity would thrive after establishment of each CP. Grassland birds, generally absent from croplands, would benefit primarily from establishment of permanent native grasses (CP2). Restricting management activities for haying and grazing to the period between 16 July and 30 September would have minimal impacts to nesting success because the peak incubation period for ground-nesting birds in the project area occurs between April and July (Terres 1991). Nongame and game wildlife would benefit from tree and hardwood tree plantings (CP3 and CP3A), establishment of permanent wildlife habitat (CP4D), shallow water areas for wildlife (CP9), and wildlife food plots (CP12). Waterfowl populations would be increased because of improved habitat conditions as a result of implementing the proposed CREP agreement.

In the short term, increases in wildlife populations as a response to improved habitat conditions would have negligible impacts on agricultural production in the proposed CREP area. However, whitetail deer populations could increase above carrying capacity in the long term without implementing proper wildlife management practices. The Louisiana Wildlife and Fisheries Department would provide technical guidance to landowners for deer management as part of the CREP agreement. This technical support would recommend and help implement procedures to ensure that wildlife populations remain within the habitat carrying capacity in the area.

Increased wildlife populations, especially game birds and deer, could enhance the socioeconomic value of agricultural lands for hunting, wildlife watching, and other outdoor recreational activities. However, the expected returns would not be realized until several years after implementation of the proposed CREP because of the time required for development of vegetation and travel corridors. See Section 4.7 for a discussion of impacts of the proposed CREP to socioeconomics in the area.

4.1.1.3 Aquatic Species

Agricultural nonpoint source pollution (agricultural runoff) is a leading threat to aquatic biodiversity nationwide (Stein et al. 2000). Sediments and nutrients (nitrogen and phosphorus) are the main sources of pollution and these pollutants combine to lower the water quality for aquatic species. Suspended sediments reduce water clarity and the amount of sunlight that reaches vegetation. Without sunlight, photosynthesis cannot occur in aquatic vegetation and microscopic algae. In turn, the aquatic insects and fish that depend on those organisms and vegetation as a food source suffer. High levels of suspended

sediments also destroy spawning sites for aquatic species by covering nests and their eggs. Excess amounts of nitrogen and phosphorus from agricultural runoff result in poor water quality and aquatic habitat by creating dense blooms of phytoplankton and algae (Welsch 1991). These blooms become so dense that they exclude sunlight and kill submerged aquatic vegetation. The subsequent decomposition by bacteria depletes oxygen, which eventually kills aquatic species.

Aquatic biodiversity in the CREP area would benefit from reduced levels of nutrient and sediment loading to surface waters from agricultural activity that would result after implementation of the Lower Ouachita River Basin CREP agreement. In particular, establishment of filter strips (CP21), riparian buffers (CP22), wetland restoration (CP23), and shallow water areas for wildlife (CP9) would enhance aquatic biodiversity in the CREP area and downstream. Filter strips and riparian buffers are widely recognized for their value in reducing nonpoint source pollution (Welsch 1991). Wetland restoration and development of shallow water areas create vernal pools that are critical for amphibian reproduction and provide habitat for other aquatic species (EPA 2001). The proposed CPs would remove, sequester, or transform nutrients, sediments, and other pollutants from agricultural runoff through intercepting pollutants before they reach surface waters, increasing infiltration, increasing nutrient uptake by vegetation, and maintaining microbial processes that reduce pollution in water bodies by denitrification (Welsch 1991).

4.1.1.4 Threatened, Endangered, and Sensitive Species

Section 7 (a)(2) of ESA requires Federal agencies to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of habitat of such species that has been determined critical. Implementation of the proposed CREP would potentially have positive impacts on threatened, endangered, and sensitive species from implementation of CPs on 50,000 acres in the proposed CREP area. Benefits to aquatic species in this category from improved water quality would be realized shortly after establishment of filter strips (CP21), riparian buffers (CP22), and wetlands (CP23). These benefits would increase in the long term. Benefits to threatened, endangered, and sensitive species and natural communities in terrestrial environments would be minimal in the short term as vegetative communities developed from establishment of permanent native grasses (CP2), tree planting (CP3) and hardwood tree planting (CP3A). However, the greatest benefits to terrestrial species and habitats in this category would be expected in the long term following implementation of the proposed CREP.

The leading causes of species endangerment are habitat loss and degradation; agriculture affects the greatest number (38%) of listed species (Stein et al. 2000). Mammals and birds listed as rare, threatened, or endangered in the proposed CREP area would benefit from the additional habitat created by implementing CPs. The listed reptiles and amphibians would also benefit from habitat creation, as well

as restoration of aquatic habitats. The listed fish, crustacean, and mollusk species would benefit from reduced sediment loading in streams, bayous, and lakes.

4.1.2 Alternative B - No Action

Under the No Action Alternative the proposed CREP would not be implemented. Lands that would have been eligible for enrollment in CREP would remain in agricultural production or would be enrolled in CRP or another conservation program. The continued use of land for agriculture or the conversion of land to another type of agricultural production would increase susceptibility to invasion by exotic species. Agricultural lands that have been farmed for long periods lack the critical components required for natural regeneration. Changes to the normal hydrologic cycle through drainage systems, loss of topsoil, clearance of native vegetation, and loss of the seed bank prevent natural succession from reclaiming disturbed land. In place of native vegetation, exotic species quickly occupy these disturbed lands. Consequently, herbicides are used on agricultural lands are used as part of farming operations to control exotic species. However, the critical components for natural regeneration remain lacking and the susceptibility of disturbed lands to invasion by exotic species remains high. Land stewardship initiatives such as CREP provide coordinated programs to direct succession toward natural regeneration. Runoff of agricultural chemicals, animal wastes, and sediment would continue to degrade water quality and therefore habitat for native plants and animals.

4.2 CULTURAL RESOURCES

4.2.1. Alternative A - Preferred

4.2.1.1 Archaeological Resources

Due to the rich cultural and archaeological history of the CREP agreement area, the potential for encountering archaeological resources during implementation of CREP contracts is considered high. CPs that are ground disturbing beyond what is normally disturbed from agricultural plowing have the potential to impact known and yet unknown archaeological resources. Such practices include earthmoving for installation of filter strips, firebreaks, fencing, and roads, as well as construction of dams, levees, and dikes in wetland restoration areas and excavation of potholes or other structures to regulate water flow.

In order to determine whether proposed ground-disturbing practices would impact archaeological resources listed in or eligible for listing in the NRHP, appropriate archaeological review would be completed prior to implementation of the contract. The archaeological review should at a minimum meet survey guidelines set forth by the Louisiana State Historic Preservation Office (SHPO). Results and recommendations from the survey should receive concurrence for the Louisiana SHPO prior to project implementation.

4.2.1.2 Architectural Resources

The CREP agreement area contains a rich architectural history related to early settlement and plantation themes of Louisiana's history. Should proposed CPs include the removal or modification of historic architectural resources included in or eligible for the NRHP, a historic architectural resources survey would be required in order to determine whether such resources are present.

4.2.1.3 Traditional Cultural Properties

Because the areas of potential effect of CREP actions are not yet defined, no Native American or other ethnic group's sacred sites or traditional cultural properties are identified. Once these areas are defined, consultation with Native American or other ethnic groups that have traditional ties to the lands may be needed to determine whether such properties exist on affected lands. Federally recognized tribes with traditional ties to Louisiana include the Alabama-Coushatta Tribe of Texas, the Caddo Tribe of Oklahoma, the Chitimacha Tribe of Louisiana, the Jena Band of Choctaw Indians, the Mississippi Band of the Choctaw, the Quapaw Tribe of Oklahoma, and the Tunica-Biloxi Indians of Louisiana (Federal Register 2002).

4.2.2. Alternative B - No Action

Under the No Action Alternative, farming practices in the CREP area would continue. Though the continuation of farming in previously disturbed areas is not expected to impact cultural resources, a change in farming practices that would disturb previously undisturbed areas could result in impacts to known or unknown archaeological, architectural, or traditional cultural resources. Continued use of traditional or deep tillage resulting in erosion could impact cultural resources.

4.3 WATER RESOURCES

4.3.1 Alternative A - Preferred

4.3.1.1 Surface Water and Impaired Waters

Implementation of the proposed CREP would have long term positive effects on surface water quality of waters within the CREP area and those downstream, including the Mississippi River and Gulf of Mexico. Conventional tillage is the most common method of farming in the proposed CREP area and fields are typically tilled to the edge of water bodies (Carnline 2004). Sediment and nutrient loading in surface water runoff may be higher on agricultural land with conventional tillage than no till or conservation tillage. Implementation of CPs would reduce the acreage of tilled land by 50,000 acres in the proposed CREP area and; consequently, the potential for sedimentation and nutrient pollution in surface waters. Establishing vegetation, whether permanent native grasses (CP2) or trees (CP3 and 3A), would stabilize

soils and reduce soil erosion and runoff of nutrients and chemicals associated with agriculture. Filter strips (CP21), riparian buffers (CP22), and wetland restoration (CP23) adjacent to watercourses would stabilize stream banks and provide areas for the retention of sediment and nutrient runoff from adjacent land by setting back the boundary of tilled land from the edge of water bodies and filtering runoff before it reaches surface waters. Additionally, a reduction in the use of agricultural pesticides and other chemicals is expected to occur as a result of the proposed CREP. Therefore it is expected that runoff of these substances would be reduced.

Activities such as vegetation clearing and soil disturbance may occur during the installation of the CPs. These activities could result in temporary and minor negative impacts to surface water quality resulting from runoff associated with these activities. Use of filter fencing or similar practices would reduce these impacts. Construction activities would be conducted in accordance with regulations specified by EPA Region 6 Water Quality Division. Construction activities (including other land-disturbing activities) that disturb one acre or more are regulated under the National Pollution Discharge Elimination System (NPDES) stormwater program. Operators of construction activities in the proposed CREP are required to develop and implement stormwater pollution prevention plans and to obtain a Construction General Permit from Louisiana Department of Environmental Quality. Failure to obtain an NPDES storm water permit is a violation of the Clean Water Act. Compliance with these regulations for construction activities would minimize potential impacts to surface waters (USEPA 2004d).

4.3.1.2 Groundwater

Implementation of the proposed CREP agreement would result in positive effects on groundwater quality. The proposed CPs would establish permanent vegetative cover where none currently exists. This vegetation will slow the rate of rainwater flow over the land, allowing for greater rates of aquifer recharge. In addition, the improvement in surface water quality and a reduction in the use of pesticides and fertilizers would result in improved quality of groundwater recharged by these surface waters.

4.3.1.3 Wetlands

Implementation of CP9 (Shallow Water Areas for Wildlife) and CP23 (Wetland Restoration) is expected to increase the acreage of wetlands and riparian habitat in the CREP area by approximately 24,000 acres. Wetlands provide for retention of sediments and uptake of nutrients from runoff (see surface water discussion above) and can act to reduce the impacts of flooding (see floodplain discussion below). Loss of wetlands in Louisiana has increased damages from flooding (Louisiana Coastal Wetlands Conservation and Restoration Task Force 2004). Wetlands provide natural flood control by detaining and slowing flood waters. Wetland restoration would enhance flood control efforts in the proposed CREP area. Additionally, wetlands provide habitat for aquatic species. These benefits are discussed in Section 4.2, Biological Resources.

Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Under the program, no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. Regulated activities are controlled by a permit review process administered by COE. An individual permit is required for potentially significant impacts. However, for discharges that will have only minimal adverse effects, USACE may issue a general permit. These may be issued on a nationwide, regional, or state basis for particular categories of activities as a means to expedite the permitting process (EPA 2004e). EO 11990 protects wetlands by requiring federal agencies to avoid long- and short-term adverse impacts associated with the destruction or modification of wetlands, avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative, and achieve a no net loss of wetland quantity and quality through wetland replacement. Any construction within or affecting wetlands in the proposed CREP area will require FSA to request that landowners obtain Section 404 permits. In addition, all requirements of EO 11990 must be followed.

4.3.1.4 Floodplains

Minor improvements in floodplains are expected to occur as a result of the implementation of the proposed CPs in existing floodplains. The establishment of vegetation including wetlands in these areas is expected to decrease erosion in floodplains and improve floodplain function. Dikes, levees, dams, and other structures for the regulation of water flow, and hence the impacts of floods within and outside 100-year floodplains, which be constructed under the proposed action, would be designed to comply with the requirements of EO 11988.

EO 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Implementation of the proposed CREP would improve floodplain functions. Establishment of filter strips, riparian forest buffers, and wetland restoration would help control flood events by providing more water storage in floodplains. Each CRP/CREP contract will be reviewed thru a site specific EE (environmental evaluation) to minimize the potential impact on floodplains. The EEA includes a review of flood insurance rate maps administered by FEMA. Applicable floodplain development permits will be obtained from the Louisiana Department of Transportation and Development, Floodplain Management Regulations Section. Public notices and comment periods will be provided as necessary.

4.3.2 Alternative B - No Action

Under the No Action Alternative, the CPs described in Section 2.1 would not be implemented. The use of land for agriculture or conversion of lands to other types of agricultural production could result in the continued degradation of water quality from runoff of agricultural chemicals, animal waste, and sediment.

4.4 EARTH RESOURCES

4.4.1 Alternative A - Preferred

Under Alternative A, potential long term positive impacts to topography would include bank stabilization due to implementation of the proposed CPs. The CREP goal of enrolling 47,000 acres of HEL would result in long term stabilization of soils and decreased erosion. Short-term disturbance to soils due to implementation of CPs could include tilling, or installation of various structures such as fences, breakwaters and roads. These activities would temporarily increase erosion. Use of best management practices such as filter fences would reduce runoff during installation.

4.4.2 Alternative B - No Action

Under Alternative B, the No Action Alternative, the CPs would not be implemented and the benefits discussed above would not occur. Erosion of soils by wind and water is expected to continue on lands that remain in production.

4.5 AIR QUALITY

Any impacts to air quality in attainment areas would be considered significant if pollutant emissions associated with the proposed action: caused, or contributed to a violation of any national, state, or local ambient air quality standard; exposed sensitive receptors to substantially increased pollutant concentrations; or exceeded any significance criteria established by Louisiana's State Implementation Plan.

4.5.1 Alternative A - Preferred

Implementation of Alternative A would result in the establishment of CPs as described in Section 2.1 on 50,000 acres of farmland in nine parishes in the Lower Ouachita River Basin. It is not expected that any of these practices would change the current attainment status or violate Louisiana's State Implementation Plan standards.

Preparing lands for CPs could include activities such as tilling, burning, and installation of various structures in water or on land. These activities would have localized temporary minor impacts to air quality. Tilling would temporarily increase the PM^{10} concentrations in the immediate area; however, this increase is not expected to be significant. Watering exposed soils during and after tilling would reduce the release of PM^{10}. The amount of open burning that would take place in conjunction with clearing and preparing lands for installation of CPs is not known. Burning could release PM^{10}, CO, hydrocarbons and NO_2 into the atmosphere (EPA 1992). The type and quantity of these pollutants would be determined by the type of vegetation being burned, the configuration of the burned material, and the weather conditions. It is not anticipated, however, that this burning would have a significant impact on the local air quality.

Heavy equipment and construction vehicles used to install roads, firebreaks, dams, levees and other structures would release CO and PM10. Like tilling and burning, impacts from the use of heavy equipment is expected to be temporary and minor and limited to the immediate construction area. In the long term, positive effects would result from removing land from production would reduce emissions from tractors and other farm machinery.

4.5.2 Alternative B - No Action

Implementation of Alternative B, the No Action Alternative, would not change existing air quality conditions.

4.6 RECREATIONAL RESOURCES

4.6.1 Alternative A - Preferred

Implementation of Alternative A would have a positive long term impact on recreational resources in the CREP area. Establishing the proposed CPs would increase the availability and quality of habitat, including aquatic habitat, for an abundance of species (see Section 4.1, Biological Resources) including game and fish subsequently improving hunting, fishing, birding and other wildlife viewing activities on lands and waters in and around the proposed CREP area. The proposed CPs would improve aesthetics, increasing the desirability of lands for all types of outdoor recreation.

A short term negative impact to recreational activities may occur during the installation of the proposed conservation practices due to unsightly construction activities or displacement of game species.

4.6.2 Alternative B - No Action

Under the No Action Alternative, the proposed CREP agreement would not be implemented and the watershed focused improvements to water, biological, and recreation resources would not occur.

4.7 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.7.1 Alternative A - Preferred

Implementing the proposed action would result in positive public benefits and minor net present values losses for land rentals into the CREP program within the ROI (Appendix C). Under the proposed action, a maximum of 50,000 acres would be conserved and restored for a 15-year period. This action would cause the loss of approximately 249 farm worker positions, at an estimated cost of $1.1 million per year in salaries. The loss of these positions would account for approximately 3.0 percent of the farm workers positions available in 1997.

Additionally, the loss of production on 50,000 acres would reduce the amount of total farm expenditures for seed, agricultural chemicals, and petroleum products by $6.1 million per year or approximately 1.1 percent of the total 1997 farm expenditures. Over the 15 year time span the inclusion of 50,000 acres in the CREP would result in maximum land rental payments of $69.26 per acre plus per acre cost sharing payments of $9.05 and an incentive payment of $10.00 per acre. Average total Federal and state conservation payments associated with CREP practices would be approximately $88.31 per acre. Return per dollar of expenditure would be approximately $7.98 based on the Federal payment. The average CREP payment for this ROI would exceed the net income per acre value of $53.75 (USDA 1999). Given that the average CREP payment would exceed the average net income by $34.56, the rate of land conversion away from agricultural practices should decrease slightly; however, given that developable land can sell for between $900 to $1,200 per acre depending on location within the ROI, the CREP payments will not reverse the land conversion trends. Total net present value for implementing the CREP within the ROI at the maximum rate per acre would be approximately ($23.1) million over 15 years, excluding non-market costs/benefits (Appendix C).

Additional non-market benefits associated with the implementation of the CRP would include an estimated $1.33 per acre of consumer surplus associated with wildlife viewing in the southeast and $2.93 per acre of consumer surplus associated with freshwater recreation activities in the southeast for a total consumer surplus per acre from CRP of $4.26 (Feather et al. 1999). Total consumer surplus per acre for the United States equated to $13.65 or approximately 68.8 percent more value than the consumer surplus generated by CRP activities in the southeast (Feather et al. 1999). Enrollment in the CREP would improve wildlife habitat for game species and non-game species. This improved and expanded wildlife

habitat would be likely to increase wildlife-related recreation opportunities within the ROI. This increased/improved habitat would be likely to improve wildlife-recreation generated economic activity within the ROI.

Additional consumer benefits would be generated through water quality improvements associated with wetland restoration activities within Louisiana associated with the CREP. Heimlich, et al. (1998) found that wetlands provided multiple market and non-market benefits to general consumer surplus. It was estimated that wetlands in the United States per acre provided a median value of $702 per acre for fish and shellfish support, $32,903 per acre for general non-users, $623 per acre for general users, $362 per acre for fishing users, $1,031 per acre for hunting users, and $244 per acre for recreation users (Heimlich et al. 1998). Wetlands also provide $2,428 per acre for general ecological functions, such as nutrient and sediment retention (Heimlich et al. 1998). Additionally, the Doering, et al. (1999) indicated that the total consumer within-basin benefits related to a national one million acre restoration program would be between $25 to $40 billion (1992 constant dollars). Public goods use values associated with wetland restoration would generate median benefits between $142 to $7,700 per acre, while median nonuse values would range from $14,900 per acre to $22 per person (Doering et al. 1999).

Since the ROI would not be considered an area of concentrated minority population or a poverty area and there would be no adverse impacts from selecting the proposed action there would be no ROI-wide impacts due to environmental justice.

4.7.2 Alternative B - No Action

Under the no action alternative, the CREP would not be implemented within the Lower Ouachita River Basin ROI. Socioeconomic conditions would continue to follow the trends associated with the ROI and larger Louisiana and southeastern United States region. This loss of wildlife habitat would adversely impact wildlife-related recreational opportunities in Louisiana, which contributed approximately $1.3 billion to the statewide economy. The continued loss of wildlife habitat could force wildlife enthusiasts to spend more of their activity dollars in adjacent states with similar opportunities and forego the remaining available wildlife-related recreation opportunities.

Additionally, since the ROI would not be considered an area of concentrated minority population or a poverty area and there would be no impacts from selecting the no action alternative there would be no ROI-wide impacts due to environmental justice.

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5.0 CUMULATIVE IMPACTS AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 CUMULATIVE EFFECTS

5.1.1 Definition of Cumulative Effects

CEQ regulations (Sec 1508.7) stipulate that the cumulative effects analysis within an environmental assessment should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present and reasonably foreseeable actions regardless of what agency or person undertakes such other actions." CEQ guidance in Considering Cumulative Effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects most likely arise when a relationship exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time tend to have potential for cumulative effects.

In this PEA, the ROI for cumulative impacts is those parishes where lands are eligible for enrollment in CREP. For the purposes of this analysis, Federal programs designed to mitigate the risks of degradation of natural resources are the primary sources of information used in identifying past, present, and reasonably foreseeable actions.

5.1.2 Past, Present, and Reasonably Foreseeable Actions

In addition to CREP, the Louisiana FSA and NRCS maintain and implement numerous programs authorized under the 2002 Farm Bill to conserve and enhance the natural resources of the area. These programs include, but are not limited to: the Coastal Wetlands Planning, Protection, and Restoration Act; WRP; CRP; the Environmental Quality Incentives Program (EQIP); Grazing Lands Conservation Initiative; the Grassland Reserve Program; and the Small Watershed Program.

5.1.2.1 Coastal Wetlands Planning, Protection, and Restoration Act

This act provides for targeted funds to be used for planning and implementing projects that create, protect, enhance, and restore wetlands in coastal Louisiana. The Task Force is comprised of five Federal agencies and the state. The Federal agencies include NRCS, COE, National Marine Fisheries Service, USFWS, and the EPA. The Governor's Office of Coastal Activities represents the state and the Louisiana Department of Natural Resources serves as the local cost-share partner for projects.

5.1.2.2 Wetland Reserve Program

WRP is a voluntary program provides technical and financial assistance to landowners who enhance wetlands and retire marginal agricultural lands. Under WRP, lands can be enrolled in permanent conservation easements, 30 year conservation easements, or restoration cost-share agreements. NRCS supports 75 to 100 percent of the cost of wetland restoration and easement payments for permanent and 30 year conservation easements. Table 5.1-1 shows the number of contracts and acreages enrolled in WRP in the proposed Ouachita CREP parishes (FSA 2004).

5.1.2.3 Conservation Reserve Program

CRP is the Federal government's largest private land environmental improvement program. This voluntary program supports the implementation of long term conservation measures designed to improve the quality of ground and surface waters, control soil erosion, and enhance wildlife habitat on environmentally sensitive agricultural land. Landowners can receive annual rental and maintenance payments, incentive payments, and cost-share support for the establishment of conservation measures. Table 5.1-1 shows the number of contracts and acreages enrolled in CRP in the proposed Ouachita CREP parishes (FSA 2004).

5.1.2.4 Environmental Quality Incentives Program

The program supports production agriculture and environmental quality as compatible goals. The program offers technical and financial assistance to farmers and ranchers who face serious threats to soil, water, and related natural resources. NRCS may pay up to 75 percent of the costs (up to $450,000) of certain conservation practices such as grassed waterways, filter strips, waste management facilities, grade stabilization structures, and other practices important to improving and maintaining the health of natural resources. Table 5.1-1 shows the number of contracts and acreages enrolled in EQIP in the proposed Ouachita CREP parishes (FSA 2004).

5.1.2.5 Grazing Lands Conservation Initiative

This voluntary program assists private land owners in identifying priority issues, finding solutions and affecting change to improve their grazing lands.

5.1.2.6 Grassland Reserve Program

The program is a voluntary program that helps landowners and operators restore and protect grassland, including rangeland and pastureland, while maintaining the areas as grazing lands. Louisiana was allocated $488,000 in 2003 to implement grassland reserve projects.

5.1.2.7 Small Watershed Program

The program provides for resource development and helps to solve resource problems that are too big to be handled by individual landowners but not extensive enough to be supported by large Federal and state watershed projects. Watershed projects in this program may be up to 250,000 acres. The goals of the program are: soil erosion control; flood prevention; agricultural water management; public fish and wildlife development; municipal or industrial water supply; public recreation development; water quality management; and ground water recharge.

Table 5.1-1 Conservation Program Enrollment in the Proposed CREP Area

Parish	WRP		CRP		EQIP	
	# Contacts	Acres	# Contacts	Acres	# Contacts	Acres
Caldwell	24	11,248	51	3384	4	103
Catahoula	1	228	2	43	0	--
Franklin	17	7784	184	10636	70	2100
East Carroll	5	1700	38	2675	0	--
Madison	6	1900	13	1000	7	700
Morehouse	1	465	24	1102	8	1235
Ouachita	13	3567	19	2148	23	6204
Richland	12	3939	145	14259	95	14000
West Carroll	2	158	572	30666	180	10800
Total	**81**	**30,989**	**1,048**	**65,913**	**387**	**35,142**

Source: FSA 2002; David Carnline personal communication.

5.1.3 Analysis of Cumulative Effects

The incremental contribution of impacts of the proposed action, when considered in combination with other past, present, and reasonably foreseeable actions, is expected to result in positive impacts to the water quality of the waters within and downstream from the CREP area including those impaired waters discussed in Section 3.3, the Mississippi River and the Gulf of Mexico. These water quality improvements are expected to positively affect biological and recreational resources.

Establishment of the conservation practices proposed in this analysis, along with those practices and improvements supported by other conservation programs in the region, will result in the establishment of vegetation including the restoration of wetlands and other native plant communities on lands that were previously farmed. Establishing vegetation will help stabilize soils and will reduce soil erosion and runoff of nutrients and chemicals into waterways. Additionally, a reduction in the use of agricultural pesticides and other chemicals is expected to occur when conservation practices are established.

5.2 Irreversible and Irretrievable Commitment of Resources

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources has on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action. For the proposed action, no irreversible or irretrievable resource commitments are expected.

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9.0 GLOSSARY

Aquifer - An underground bed or layer of earth, gravel, or porous stone that yields water.

Conservation Practice - Established national standard commonly used to treat natural resource problems (soil, water, air, plants, and animals).

Conservation Priority Area – areas so designated by the Deputy Administrator of Farm Programs, Farm Service Agency with actual and adverse water quality or habitat impacts related to agricultural production activities or to assist agricultural producers to comply with Federal and state environmental laws and to meet other conservation needs, such as for air quality.

Critical Habitat - The specific areas within the geographical area occupied by the species on which are found those physical or biological features that are both essential to the conservation of the species and may require special management considerations or protection.

Drainage Basin - The geographical area draining into a river or reservoir.

Endangered Species - Any species that is in danger of extinction throughout all or a significant portion of its range, other than an officially designated insect pest.

Highly Erodible Land - Land that has an erodibility index of 8 or more. (*Defined at 7 CFR 12.2*)

Riparian - Of, on, or relating to the banks of a natural course of water.

Threatened Species - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Watershed - The whole region or extent of country which contributes to the supply of a river or lake.

Wetland - Areas that are saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. (*Defined at 33 CFR 320-328.3*)

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APPENDIX A: CONSERVATION PRACTICES

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Summary of Conservation Practices Proposed in Louisiana's Lower Ouachita River Basin CREP Agreement

NRCS Conservation Practice: Grassed Waterways

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP8A – Grassed Waterways

Purposes:

- To convey runoff from terraces, diversions, or other water concentrations without causing erosion or flooding
- To reduce gully erosion
- To protect/improve water quality

Maintenance Standards:

- Protect from concentrate flow and grazing until vegetation is established.
- Minimize damage to vegetation by excluding livestock whenever possible.
- Inspect regularly, especially following heavy rains.
- Damaged areas should be filled, compacted, and seeded immediately.
- Prescribed burning and mowing may be appropriate to enhance wildlife values, but must be conducted to avoid peak nesting seasons and reduced winter cover.

NRCS Conservation Practice: Conservation Cover

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP1 - Establishment of Permanent Introduced Grasses and Legumes
- CP2 – Establishment of Permanent Native Grasses

Purposes:

- Reduce soil erosion and sedimentation; to improve water quality
- Enhance wildlife habitat.

Maintenance Standards:

- Maintenance activities including prescribed burning and mowing should not disturb cover during primary nesting period for grassland species.
- Mow or periodically graze vegetation to maintain capacity and reduce sediment deposition.
- Control noxious weeds.
- Do not use as a road and avoid crossing with heavy equipment when wet.

NRCS Conservation Practice: Cover and Green Manure Crop

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP1 - Establishment of Permanent Introduced Grasses and Legumes
- CP2 – Establishment of Permanent Native Grasses
- CP22 – Riparian Buffer

Purposes:

- Reduce erosion from wind and water.
- Increase soil organic matter.
- Manage excess nutrients in the soil profile.
- Promote biological nitrogen fixation.

- Increase biodiversity.
- Suppress weeds.
- Provide supplemental forage.
- Manage soil moisture.

Maintenance Standards:

- Control growth of the cover crop to reduce competition from volunteer plants and shading.
- Control weeds in the cover crop by mowing or herbicide application.
- Avoid cover crop species that attract potentially damaging insects.

NRCS Conservation Practice: Restoration and Management of Declining Habitat

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP1 - Establishment of Permanent Introduced Grasses and Legumes
- CP2 – Establishment of Permanent Native Grasses
- CP3A – Hardwood Tree Planting
- CP12 – Wildlife Food Plot
- CP22 – Riparian Buffer
- CP23 – Wetland Restoration

Purposes:

- Restore land or aquatic habitats degraded by human activity.
- Provide habitat for rare and declining wildlife species by restoring and conserving native plant communities.
- Increase native plant community diversity.
- Manage unique or declining native habitats.

Maintenance Standards:

- Where feasible, prescribed burning should be utilized instead of mowing.
- Management measure must be provided to control invasive species and noxious weeds.
- Species used in restoration should be suitable for the planned purpose.
- Only certified, high quality, and ecologically adapted native seed and plant material should be used.
- Proper planting dates, and care in handling and planting of the seed or plant material will ensure that established vegetation will have an acceptable rate of survival.
- Site preparation should be sufficient for establishment and growth of selected species.
- Timing and use of equipment should be appropriate for the site and soil conditions.

NRCS Conservation Practice: Wildlife Upland Habitat Management

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP2 – Establishment of Permanent Native Grasses
- CP3 – Tree Planting
- CP3A – Hardwood Tree Planting
- CP4D – Permanent Wildlife Habitat, Noneasement
- CP12 – Wildlife Food Plot

Purposes:

- Provide a variety of food for the desired wildlife species.
- Provide a variety of cover types for the desired wildlife species.
- Provide drinking water for desired wildlife species.

- Arrange habitat elements in proper amounts and locations to benefit desired species.
- Manage the wildlife habitat to achieve a viable wildlife population within the species' home range.

Maintenance Standards:

- Use of native plant materials is encouraged.
- Biological control of undesirable plant species and pests should be implemented where available and feasible.
- Proper timing of haying and livestock grazing should avoid periods when upland wildlife are nesting, fawning, etc. And should allow for the establishment, development, and management of upland vegetation for the intended purpose.
- Spraying or other control of noxious weeds should be done on a "spot" basis.
- Grazing and haying should be conducted to maintain or improve vegetation structure and composition so as to improve the desired wildlife habitat.

NRCS Conservation Practice: Shallow Water Area for Wildlife

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP9 – Shallow Water Areas for Wildlife
- CP12 – Wildlife Food Plot

Purposes:

- Provide open water areas on agricultural fields and moist soil areas to facilitate waterfowl resting and feeding.
- Proved habitat for reptiles and amphibians and other aquatic species that serve as important prey species for waterfowl, raptors, herons, and other wildlife.

Maintenance Standards:

- The impoundment should be dewatered and disked or burned at 2 to 3 year intervals to control the invasion of undesirable plants.
- Biological control of undesirable plants species and pests should be implemented where available and feasible.

NRCS Conservation Practice: Wetland Restoration

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP 23 – Wetland Restoration

Purpose:

- To restore hydric soil conditions, hydrologic conditions, hydrophytic plant communities and wetland functions that occurred on the disturbed wetland site prior to modification to the extent practicable.

Maintenance Standards:

- A permanent water supply should be available approximating the needs of the wetlands.
- A functional assessment should be performed on the site prior to restoration.
- Vegetation should be restored as close to the original natural plant community as the restored site conditions will allow.
- Adjust timing and level setting of water control structures required of the establishment of desired hydrologic conditions or for management of vegetation.
- Develop inspection schedule for embankments and structures for damage assessment.
- Monitor depth of sediment accumulation to be allowed before removal is required.

NRCS Conservation Practice: Wetland Creation

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP4D – Permanent Wildlife Habitat, Noneasement
- CP12 – Wildlife Food Plot
- CP21 – Filter Strips
- CP22 – Riparian Buffer

Purpose:

- To create wetlands that have wetland hydrology, hydrophytic plant communities, hydric soil conditions, and wetland functions and/or values.

Maintenance Standards:

- Created wetlands should only be located where the soils, hydrology, and vegetation can be modified to meet the current NRCS criteria for a wetland.
- Establish vegetative buffers on surrounding uplands to reduce sediment and soluble sediment-attached substances carried by runoff and/or wind.
- Timing and level setting of water control structures should be established to reach the desired hydrologic conditions or for the management of vegetation.
- Inspection of embankments should be done at regular intervals.
- The depth of sediment accumulation to be allowed before removal should be determined prior to wetland reaction.
- Haying and grazing should be managed to protect and enhance established and emerging vegetation.

NRCS Conservation Practice: Stream Habitat Improvement and Management

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP3 – Tree Planting
- CP3A – Hardwood Tree Planting
- CP4D – Permanent Wildlife Habitat, Noneasement
- CP22 – Riparian Buffer
- CP23 – Wetland Restoration

Purposes:

- Provide suitable habitat for desired aquatic species and diverse aquatic communities.
- Provide channel morphology and associated riparian characteristics important to desired aquatic species.

Maintenance Standards:

- Establish soil conservation, nutrient management, pesticide management practices, and other management techniques for non-point sources of pollution.
- Restore or protect riparian and floodplain vegetation and associated riverine wetlands.
- Maintain suitable flows for aquatic species and channel maintenance.
- If needed, improve floodplain to channel connectivity including off channel habitats.

NRCS Conservation Practice: Diversions

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP8A – Grass Waterways, Noneasement

Purposes:

- Reduce runoff damages from upland runoff.
- Divert water away from farmsteads, agricultural waste systems, and other improvements.

- Increase or decrease the drainage area above ponds.
- Protect terrace systems by diverting water from the top terrace where topography, land use, or land ownership prevents terracing the land above.
- Intercept surface and shallow subsurface flow.

Maintenance Standards:

- Construction and maintenance activities should be done in such a way as to minimize disturbance to wildlife habitat.
- Opportunities should be explored to restore and improve wildlife habitat, including habitat for threatened, endangered, and other species of concern.
- Vegetation should be maintained and trees and brush controlled by hand, chemical and/or mechanical means.
- Planting native vegetation should be considered at non-cropland sites.
- Periodic inspections are necessary, especially immediately following significant storms.
- Promptly repair or replace damaged components of the diversion as necessary.

NRCS Conservation Practice: Alley Cropping

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP3 – Tree Planting
- CP3A – Hardwood Tree Planting

Purposes:

- Reduce surface water runoff and erosion.
- Improve utilization and recycling of soil nutrients.
- Reduce subsurface water quantity or alter water table depths.
- Provide or enhance wildlife habitat.
- Create habitat for biological pest management.
- Decrease movement offsite of nutrients or chemicals.
- Increase net carbon storage in the vegetation and soil.

Maintenance Standards:

- Tree or shrub rows should be oriented on or near the contour to reduce water erosion.
- To reduce surface water runoff and erosion, herbaceous ground cover should be established in conjunction with the tree or shrub rows.
- To reduce wind erosion, tree or shrub rows should be oriented as close as possible and perpendicular to erosive winds.
- Trees, shrubs, crops and/or forages need to be inspected periodically and protected from adverse impacts.

NRCS Conservation Practice: Contour Buffer Strips

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP1 – Establishment of Permanent Introduced Grasses and Legumes
- CP2 – Establishment of Permanent Native Grasses
- CP12 – Wildlife Food Plot
- CP21 – Filter Strips

Purposes:

- Reduce sheet and rill erosion.
- Reduce transport of sediment and other water-borne contaminants down slope, onsite or offsite.
- Enhance wildlife habitat.

Maintenance Standards:

- Cropped strips should be alternated with the buffer strips down the hill slope.
- Vegetation grown on buffer strips should consist of grasses, legumes, or grass-legume mixtures, adapted to the site.
- All farm operations should be done parallel to the strip boundaries except on headlands or end rows with gradients less than the criteria set forth in this standard.
- Time mowing of buffer strips to maintain appropriated vegetative density and height for optimum trapping of sediment from the upslope cropped strip during the critical erosion periods.
- Fertilize buffer strips as needed to maintain stand density.
- Spot seed or totally renovate buffer strip systems when needed.

NRCS Conservation Practice: Field Border

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP1 – Establishment of Permanent Introduced Grasses and Legumes
- CP2 – Establishment of Permanent Native Grasses
- CP 12 – Wildlife Food Plot
- CP4D – Permanent Wildlife Habitat, Noneasement
- CP21 – Filter Strips

Purposes:

- Reduce erosion from wind and water.
- Protect soil and water quality.
- Manage harmful insect populations.
- Provide wildlife food and cover.

Maintenance Standards:

- Field borders should be established around the field edges and should be seeded with adapted species of permanent grass, legumes, and/or shrubs.
- Repair storm damage.
- Remove sediment when 6 inches of sediment have accumulated at the field border/cropland interface.
- Shut off sprayers and raise tillage equipment to avoid damage to field borders.
- Shape and reseed border areas damaged by chemicals, tillage, or equipment traffic.
- Fertilize, mow, harvest, and control noxious weeds to maintain plant vigor.
- Ephemeral gullies and rills that develop in the border should be filled and reseeded.

NRCS Conservation Practice: Filter Strip

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP1 – Establishment of Permanent Introduced Grasses and Legumes
- CP2 – Establishment of Permanent Native Grasses
- CP4D – Permanent Wildlife Habitat, Noneasement
- CP12 – Wildlife Food Plot
- CP21 – Filter Strips

Purposes:

- Reduce sediment, particulate organics, sediment adsorbed contaminant loadings, and dissolved contaminant loadings in runoff.
- Reduce sediment particulate organics, and sediment adsorbed contaminant loadings in surface irrigation tailwater.

- Restore, create, or enhance herbaceous habitat for wildlife and beneficial insects.
- Maintain or enhance watershed functions and values.

Maintenance Standards:

- Permanent filter strip vegetative plantings should be harvested as appropriate to encourage dense growth, maintain an upright growth habit, and remove nutrients and other contaminants that are contained in the plant tissue.
- Undesired weed species, especially state-listed noxious weeds, should be controlled with spot spraying of herbicide.
- Prescribed burning may be used to manage and maintain the filter strip when an approved burn plan has been developed.
- If wildlife habitat is the purpose, destruction of vegetation within the portion of thee strip devoted to removing sediment is authorized only to the extent needed.

NRCS Conservation Practice: Riparian Forest Buffer

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP3 – Tree Planting
- CP3A – Hardwood Tree Planting
- CP4D – Permanent Wildlife Habitat, Noneasement
- CP21 – Filter Strips.
- CP22 – Riparian Buffer

Purposes:

- Create shade to lower water temperatures to improve habitat for aquatic organisms.
- Proved a source of detritus and large woody debris for aquatic and terrestrial organisms.
- Create wildlife habitat and establish wildlife corridors.
- To reduce excess amounts of sediment, organic material, nutrients, and pesticides in surface runoff and reduce excess nutrients and other chemicals in shallow ground water flow.
- Provide protection against scour erosion within the floodplain.
- Restore natural riparian plant communities.

Maintenance Standards:

- The riparian forest buffer should be inspected periodically and protected from adverse impacts.
- Replacement of dead trees and shrubs and control of undesirable vegetative competition should continue until the buffer is, or will progress to, a fully functional condition.
- An adjacent filter strip should be used to control excessive erosion and sediment deposition within the stream.

NRCS Conservation Practice: Riparian Herbaceous Cover

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP4D – Permanent Wildlife Habitat, Noneasement
- CP21 – Filter Strips.
- CP22 – Riparian Buffer

Purposes:

- Intercept the direct solar radiation to help maintain or restore suitable water temperatures for fish and other aquatic organisms.
- Improve and protect water quality by reducing the amount of sediment and other pollutants, such as pesticides, organics, and nutrients in surface runoff as well as nutrients and chemicals in shallow ground water flow.
- Provide food for aquatic insects that are important food items for fish.

- Help stabilize the channel bed and streambank.
- Serve as corridors between existing habitats.

Maintenance Standards:

- Plant species selected must be adapted to the duration of saturation and inundation of the site.
- Upland erosion control measures should be put into place in order to slow the movement of soil and other debris in order to maintain riparian function.
- Any fertilizers, pesticides, or other chemicals in the riparian area should be used only when necessary.

NRCS Conservation Practice: Streambank and Shoreline Protection

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP22 – Riparian Buffer

Purposes:

- Prevent the loss of land or damage to land uses, or other facilities adjacent to the banks, including the protection of known historical, archeological, and traditional cultural properties.
- Maintain the flow or storage capacity of the water body or to reduce the offsite or downstream effects of sediment resulting from bank erosion.
- Improve or enhance the stream corridor for fish and wildlife habitat, aesthetics, and recreation.

Maintenance Standards:

- Stream corridor vegetative components should be established as necessary for ecosystem functioning and stability.
- Livestock exclusion should be considered during establishment of vegetative measures and appropriate grazing practices applied after establishment to maintain plant community integrity.
- When designing protective measures, considerations should be made to the changes that may occur in the watershed hydrology and sedimentation over the design life of the measure.
- When appropriate, establish a buffer strip and/or diversion at the top of the bank or shoreline protection zone to help maintain and protect installed measures, improve their function, filter out sediments, nutrients, and other pollutants, from runoff, and proved additional wildlife habitat.

NRCS Conservation Practice: Vegetative Barrier

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP1 – Establishment of Permanent Introduced Grasses and Legumes
- CP2 – Establishment of Permanent Native Grasses
- CP21 – Filter Strips

Purposes:

- Reduce sheet and rill erosion.
- Reduce ephemeral gully erosion.
- Manage water flow.
- Stabilize steep slopes.
- Trap sediment.

Maintenance Standards:

- All tillage and equipment operations in the interval between barriers should be parallel to the vegetative barrier.
- Obstructions, such as trees and debris that interfere with vegetative growth and maintenance, should be removed to improve vegetation establishment and alignment.

- Mowing may be used as a management practice to encourage the development of a dense stand and prevent shading of crops in adjacent fields.
- Weed control should be accomplished by mowing or by spraying or wick application of labeled herbicides.
- Crop tillage and planting operations should be parallel with the vegetative barrier.
- Washouts or rills that develop should be filled and replanted immediately.

NRCS Conservation Practice: Wetland Enhancement

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP4D – Permanent Wildlife Habitat, Noneasement
- CP 12 – Wildlife Food Plot
- CP 23 – Wetland Restoration

Purposes:

- Modify the hydrologic condition, hydrophytic plant communities, and/or other biological habitat components of a wetland for the purpose of favoring specific wetland functions or values.

Maintenance Standards:

- Where possible, native plant materials should be used; however, introduced or cultivated plant species can be used to meet specific project objectives.
- Biological control of undesirable plant species and pests should be implemented where available and feasible.
- An inspection schedule for embankments and structures for damage assessment is required.
- Haying and livestock grazing should be managed to protect and enhance established and emerging vegetation.

NRCS Conservation Practice: Wetland Wildlife Habitat Management

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP4D – Permanent Wildlife Habitat, Noneasement
- CP 12 – Wildlife Food Plot
- CP23 – Wetland Restoration

Purposes:

- Maintain, develop, or improve habitat for waterfowl, fur-bearers, or other wetland associated flora and fauna.

Maintenance Standards:

- Native plants should be used wherever possible.
- Haying and livestock grazing plans should be developed so as to allow the establishment, development, and management of wetland and associated upland vegetation for the intended purpose.
- Biological control of undesirable plant species and pests shall be implemented where available and feasible.

NRCS Conservation Practice: Herbaceous Wind Barriers

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP12 – Wildlife Food Plot

Purposes:

- Reduce soil erosion from wind.
- Protect growing crops from damage by wind-borne soil particles.

- Manage snow to increase plant available moisture.
- Provide food and cover for wildlife

Maintenance Standards:

- Annual barriers will be managed so barriers are of sufficient height and condition to meet their intended purpose.
- Gaps in perennial barriers should be replanted as soon as practical to maintain barrier effectiveness.
- Perennial barriers should be fertilized as needed, and weeds controlled by cultivation or chemical spot treatments.
- Barriers composed of perennial vegetation that are designed to enhance wildlife habitat should not be mowed unless their height or width exceeds that required to achieve the barrier purpose, or they become competitive with adjoining land use.
- Mowing, if necessary, should be done during the non-nesting season.
- The use of prescribed burning to enhance plant vigor may be completed after nesting/resting periods.

NRCS Conservation Practice: Tree/Shrub Establishment

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP3 – Tree Planting
- CP3A – Hardwood Tree Planting
- CP4D – Permanent Wildlife Habitat, Noneasement
- CP12 – Wildlife Food Plots
- CP22 – Riparian Buffer

Purposes:

- Establish woody plants for forest products, wildlife habitat, long-term erosion control, improvement of water quality, reduction of air pollution, sequestration of carbon, energy conservation, and enhancement of aesthetics.

Maintenance Standards:

- Competing vegetation should be controlled until the woody plants are established.
- Noxious weeds should be controlled.
- Replant when survival is inadequate.
- Supplemental water should be provided as needed.
- Trees and shrubs should be inspected periodically and protected from adverse impacts including insects, diseases, competing vegetation, fire, and damage from livestock or wildlife.
- Periodic applications of nutrients may be needed to maintain plant vigor.

NRCS Conservation Practice: Dike

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP9 – Shallow Water Areas for Wildlife.

Purposes:

- Permit improvement of agricultural land by preventing overflow and better use of drainage facilities.
- Prevent damage to land and property, and to facilitate water storage and control in connection with wildlife and other developments.
- Protect natural areas, scenic features, and archaeological sites from damage.

Maintenance Standards:

- All dikes must be adequately maintained to the required shape and height.
- Maintenance of dikes should include periodic removal of woody vegetation that may become established on the embankment.
- Provisions for maintenance access must be provided.

NRCS Conservation Practice: Range Planting

FSA CRP Conservation Practices for Proposed Louisiana CREP:

- CP2 – Establishment of Permanent Native Grasses

Purposes:

- Restore a plant community similar to its historic climax or the desired plant community.
- Provide or improve forages for livestock.
- Provide or improve forage, browse, or cover for wildlife.
- Reduce erosion by wind and/or water.
- Improve water quality and quantity.

Maintenance Standards:

- Any necessary replanting due to drought, insects, or other uncontrollable event that prevented adequate stand establishment should be addressed as soon as possible.
- Thin stands may only need additional grazing deferment during the growing season.
- Species should be selected and planted in a designed manner that will meet the cover requirements of the wildlife species of concern.
- Satisfactory site preparation is necessary to ensure a successful range planting.

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APPENDIX B: STATE LISTED PLANT SPECIES OF CONCERN

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State Listed Plant Species of Concern

Trees and Shrubs		
American hazelnut	*Corylus americana*	S1
Three-flowered hawthorn	*Crataegus triflora*	S1
Eastern leatherwood	*Dirca palustris*	S1
Wahoo	*Euonymus atropurpureus*	S1
Hickorynut	*Obovaria ollvaria*	S1
Dwarf live oak	*Quercus minima*	S?
Oglethorpe's oak	*Q. oglethorpensis*	S1
Durand's white oak	*Q. sinuata var. sinuata*	S1
Lance-leaved buckthorn	*Rhamnus lanceolata*	S1
Dwarf gray willow	*Salix humllis var. Tristis*	S2
Northern prickley ash	*Zanthoxylum americanum*	S1
Grasses and Grasslike Plants		
Side-oats grama	*Bouteloua curtipendula*	S1
Cypress-knee sedge	*Carex decomposita*	S1
Three-angle spikerush	*Eleocharis tricostata*	S1?
Wolf spikerush	*E. wolfii*	S1?
Western umbrella-grass	*Fuirena simplex*	S1
Eastern managrass	*Glyceria septentrionalis*	S1
Fowl mannagrass	*G. striata*	S1
Long's yellow star-grass	*Hypoxis longii*	S4
Wiry witchgrass	*Panicum flexile*	S1
Long-beaked baldrush	*Rhynchospora scirpoides*	S1
Prairie cordgrass	*Spartina pectinata*	S1
Forbs		
Virginia anemone	*Anemone virginiana*	S1
Northern burmannia	*Burmannia biflora*	S2
Tall bellflower	*Campanulastrum americanum*	S1
Fairywand	*Chamaelirium luteum*	S2, S3
White-leaved leather-flower	*Clematis glaucophylla*	S1
Autumn coralroot	*Corallorrhiza odontorhiza*	S1
Southern lady's-slipper	*Cypripedium kentuckiense*	S1
Log fern	*Dryopteris celsa*	S1

1

Forbs (cont'd)		
Purple coneflower	*Echinacea purpurea*	S2
Spike	*Elliptio dilatata*	S2, S3
Thoroughwort	*Eupatorium purpureum*	S1
Crested coral-root	*Hexalectris spicata*	S2
Purple bluet	*Houstonia purpurea* var. *calycosa*	S2
Large whorled pogonia	*Isotria verticillata*	S3
Staghorn clubmoss	*Lycopodiella cernua* var. *cernua*	S2
Snow melanthera	*Melanthera nivea*	S2
Square-stemmed monkey-flower	*Mimulus ringens*	S2
American pinesap	*Monotropa hypopithys*	S2
Prairie pleat-leaf	*Nemastylis geminiflora*	S2, S3
Meadow evening primrose	*Oenothera pilosella* ssp. *sessilis*	S1?
Shadow-witch orchid	*Ponthieva racemosa*	S2
Nuttall pondweed	*Potamogeton epihydrus*	S1
Yellow water-crowfoot	*Ranunculus flabellaris*	S1
Starry campion	*Silene stellata*	S2
Fire pink	*S. virginica*	S2
Eared goldenrod	*Solidago auriculata*	S3
Great plains ladies'- tresses	*Splranthes magnicamporum*	S2
Squawfoot	*Strophitus undulatus*	S2
Yellow pimpernell	*Taenidia integerrima*	S2
Yellowleaf tinker's-weed	*Triosteum angustifolium*	S2
Sessile-leaf bellwort	*Uvularia sessllifolla*	S2
Nuttall death camas	*Zigadenus nuttallii*	S1

S1: Critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it extremely vulnerable to extirpation.
S2: Imperiled in Louisiana because of extreme rarity (6 to 20 known extant populations) or because of some factor(s) making it extremely vulnerable to extirpation.
S3: Rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)
S4: Apparently secure in Louisiana with many occurrences (100 to 1000 known extant populations)
(B or N may be used as a qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding
SA: Accidental in Louisiana, including species (usually birds or butterflies) recorded once or twice or only at great intervals hundreds or even thousands of miles outside of their usual range
SH: Of historical occurrence in Louisiana, but no recent records verified within the last 20 years; formerly part of the established biota, possibly still persisting.
SX: Believed to be extirpated from Louisiana.
S?: Rank uncertain

Source: LNHP 2003b

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APPENDIX C: SOCIOECONOMIC ANALYSIS

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Socioeconomic Analysis Assumptions

Discount Rate	5.1%
Base Year	2004
Inflation Rate (2003)	1.3%
Inflation Rate (2004)	1.7%
Inflation Rate (2005)	1.8%
Inflation Rate (2006)	1.9%
Cost-Share	$5.03
Farm Expenditure	$11.06
SIP	$10.00
PIP	$4.02
Land Rental	$69.26
Maintenance	$ -
Value of Lost Jobs	$1,116,569.57
Value of Lost Sales	$6,093,196
Total Acres	50,000

Socioeconomic Data Analysis

Year	Discount Factor	Cost Share	Farm Expenditure	Rental Rate	Maint.	PIP	SIP	Lost Jobs	Lost Sales	Sum	NPV
2004	1										
2005	0.951474786	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($2,132,745.89)
2006	0.905304268	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($2,029,253.94)
2007	0.861374185	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,930,783.95)
2008	0.819575818	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,837,092.25)
2009	0.779805726	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,747,946.96)
2010	0.741965486	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,663,127.46)
2011	0.705961452	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,582,423.84)
2012	0.671704522	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,505,636.38)
2013	0.639109916	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,432,575.06)
2014	0.60809697	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,363,059.04)
2015	0.578588935	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,296,916.31)
2016	0.550512783	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,233,983.17)
2017	0.523799032	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,174,103.87)
2018	0.498381572	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,117,130.23)
2019	0.4741975	$251,500.00	$553,000.00	$3,462,750.00	$0.00	$201,000.00	$500,000.00	($1,116,569.57)	($6,093,196.36)	($2,241,515.93)	($1,062,921.25)
Total											($23,109,699.60)
NPV/Acre											($462.19)

APPENDIX D: AGENCY & STAKEHOLDER RESPONSE

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506
January 5, 2004

Ms. Elizabeth Pruitt
Geo-Marine, Incorporated
11846 Rock Landing Drive, Suite C
Newport News, Virgina 23606

Dear Ms. Pruitt:

Please reference U.S. Department of Agriculture, Farm Service Agency's, December 17, 2003, letter requesting our review of Louisiana's proposed Lower Ouachita River Basin Conservation Reserve Enhancement Program agreement. That letter requested information regarding Federally listed threatened and endangered species and critical habitat that may occur in Caldwell, East Carroll, Franklin, Madison, Morehouse, Ouachita, Richland, Tensas, and West Carroll Parishes. Geo-Marine, Inc. has been contracted by the Farm Service Agency, Louisiana State Office, to prepare a programmatic environmental assessment of implementing that agreement. The U.S. Fish and Wildlife Service (Service) has reviewed the information you provided, and offers the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

A parish list of threatened and endangered species of Louisiana is enclosed for your use in determining potential project-related effects on Federally listed species within the Parishes that comprise the area within the proposal agreement. We appreciate the opportunity to provide comments in the planning stages of the proposed environmental assessment. If you need further assistance, please contact Angela Culpepper (337/291-3137) of this office.

Sincerely,

Russell C. Watson
Supervisor
Louisiana Field Office

Enclosure

cc: USDA, Farm Service Agency, Alexandria, LA
LDWF, Natural Heritage Program, Baton Rouge, LA

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April 16, 2003

THREATENED AND ENDANGERED SPECIES OF LOUISIANA
PARISH LIST

E=Endangered T=Threatened C=Candidate CH=Critical Habitat[1]

PARISH	OCCURRENCE	GROUP	STATUS
ALLEN			
CHAFF-SEED, AMERICAN	KNOWN	PLANT	E
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
ASCENSION			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
MUSSEL, INFLATED HEELSPLITTER	KNOWN	MOLLUSC	T
STURGEON, GULF	KNOWN	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
ASSUMPTION			
EAGLE, BALD	KNOWN	BIRD	T
AVOYELLES			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
STURGEON, PALLID	POSSIBLE	FISH	E
BEAUREGARD			
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
BIENVILLE			
SNAKE, LOUISIANA PINE	KNOWN	REPTILE	C
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
BOSSIER			
EAGLE, BALD	KNOWN	BIRD	T
STURGEON, PALLID	POSSIBLE	FISH	E
TERN, INTERIOR LEAST	KNOWN	BIRD	E
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
CADDO			
EAGLE, BALD	KNOWN[2]	BIRD	T
STURGEON, PALLID	POSSIBLE	FISH	E
TERN, INTERIOR LEAST	KNOWN	BIRD	E
CALCASIEU			
EAGLE, BALD	KNOWN	BIRD	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
CAMERON			
EAGLE, BALD	KNOWN[2]	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	KNOWN	FISH	T
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
CATAHOULA			
STURGEON, PALLID	POSSIBLE	FISH	E
CLAIBORNE			
EAGLE, BALD	KNOWN[2]	BIRD	T
CONCORDIA			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
STURGEON, PALLID	KNOWN	FISH	E
TERN, INTERIOR LEAST	KNOWN	BIRD	E

1

PARISH	OCCURRENCE	GROUP	STATUS
DE SOTO			
EAGLE, BALD	KNOWN[2]	BIRD	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
EAST BATON ROUGE			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
MUSSEL, INFLATED HEELSPLITTER	KNOWN	MOLLUSC	T
STURGEON, GULF	KNOWN	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
EAST CARROLL			
BEAR, LOUISIANA BLACK	KNOWN	MAMMAL	T
STURGEON, PALLID	KNOWN	FISH	E
TERN, INTERIOR LEAST	KNOWN	BIRD	E
EAST FELICIANA			
STURGEON, PALLID	KNOWN	FISH	E
MUSSEL, INFLATED HEELSPLITTER	KNOWN	MOLLUSC	T
EVANGELINE			
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
FRANKLIN			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
GRANT			
MUSSEL, LOUISIANA PEARLSHELL	KNOWN	MOLLUSC	T
STURGEON, PALLID	POSSIBLE	FISH	E
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
IBERIA			
BEAR, LOUISIANA BLACK	KNOWN	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
PELICAN, BROWN	KNOWN	BIRD	E
STURGEON, GULF	POSSIBLE	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
IBERVILLE			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
STURGEON, GULF	POSSIBLE	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
JACKSON			
EAGLE, BALD	KNOWN[2]	BIRD	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
JEFFERSON			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	KNOWN	FISH	T, CH
STURGEON, PALLID	KNOWN	FISH	E
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T

1

PARISH	OCCURRENCE	GROUP	STATUS
LAFOURCHE			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	POSSIBLE	FISH	T
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
LA SALLE			
EAGLE, BALD	KNOWN	BIRD	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
LIVINGSTON			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
MUSSEL, INFLATED HEELSPLITTER	KNOWN	MOLLUSC	T
STURGEON, GULF	KNOWN	FISH	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
MADISON			
BEAR, LOUISIANA BLACK	KNOWN	MAMMAL	T
STURGEON, PALLID	KNOWN	FISH	E
TERN, INTERIOR LEAST	KNOWN	BIRD	E
MOREHOUSE			
EAGLE, BALD	KNOWN	BIRD	T
MUSSEL, PINK MUCKET PEARLY	KNOWN	MOLLUSC	E
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
NATCHITOCHES			
EAGLE, BALD	KNOWN[2]	BIRD	T
SNAKE, LOUISIANA PINE	KNOWN	REPTILE	C
STURGEON, PALLID	POSSIBLE	FISH	E
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
ORLEANS			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIA	POSSIBLE	MAMMAL	E
PELICAN, BROWN	POSSIBLE	BIRD	E
STURGEON, GULF	KNOWN	FISH	T, CH
STURGEON, PALLID	KNOWN	FISH	E
OUACHITA			
EAGLE, BALD	KNOWN	BIRD	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
PLAQUEMINES			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	KNOWN	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
POINTE COUPEE			
BEAR, LOUISIANA BLACK	KNOWN	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
STURGEON, PALLID	KNOWN	FISH	E

1

PARISH	OCCURRENCE	GROUP	STATUS
RAPIDES			
EAGLE, BALD	KNOWN[2]	BIRD	T
MUSSEL, LOUISIANA PEARLSHELL	KNOWN	MOLLUSC	T
STURGEON, PALLID	POSSIBLE	FISH	E
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
RED RIVER			
STURGEON, PALLID	POSSIBLE	FISH	E
TERN, INTERIOR LEAST	KNOWN	BIRD	E
RICHLAND			
BEAR, LOUISIANA BLACK	KNOWN	MAMMAL	T
SABINE			
EAGLE, BALD	KNOWN	BIRD	T
SNAKE, LOUISIANA PINE	KNOWN	REPTILE	C
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
ST. BERNARD			
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	KNOWN	FISH	T, CH
STURGEON, PALLID	KNOWN	FISH	E
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
ST. CHARLES			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	POSSIBLE	BIRD	E
STURGEON, GULF	KNOWN	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
ST. HELENA			
STURGEON, GULF	KNOWN	FISH	T
MUSSEL, INFLATED HEELSPLITTER	KNOWN	MOLLUSC	T
ST. JAMES			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
STURGEON, GULF	POSSIBLE	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
ST. JOHN THE BAPTIST			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	POSSIBLE	BIRD	E
STURGEON, GULF	KNOWN	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
ST. LANDRY			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
STURGEON, PALLID	KNOWN	FISH	E
ST. MARTIN			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
STURGEON, PALLID	KNOWN	FISH	E

1

PARISH	OCCURRENCE	GROUP	STATUS
ST. MARY			
BEAR, LOUISIANA BLACK	KNOWN	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	POSSIBLE	FISH	T
STURGEON, PALLID	KNOWN	FISH	E
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
ST. TAMMANY			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	POSSIBLE	BIRD	E
QUILLWORT, LOUISIANA	KNOWN	PLANT	E
STURGEON, GULF	KNOWN	FISH	T, CH
TORTOISE, GOPHER	KNOWN	REPTILE	T
TURTLE, RINGED MAP	KNOWN	REPTILE	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
TANGIPAHOA			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	POSSIBLE	BIRD	E
STURGEON, GULF	KNOWN	FISH	T
TORTOISE, GOPHER	KNOWN	REPTILE	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
TENSAS			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
EAGLE, BALD	KNOWN	BIRD	T
STURGEON, PALLID	KNOWN	FISH	E
TERN, INTERIOR LEAST	KNOWN	BIRD	E
TERREBONNE			
EAGLE, BALD	KNOWN	BIRD	T
MANATEE, WEST INDIAN	POSSIBLE	MAMMAL	E
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	KNOWN	FISH	T
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
UNION			
EAGLE, BALD	KNOWN	BIRD	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
VERMILION			
PELICAN, BROWN	KNOWN	BIRD	E
PLOVER, PIPING	KNOWN	BIRD	T, CH
STURGEON, GULF	POSSIBLE	FISH	T
TURTLE, GREEN SEA	KNOWN	REPTILE	T
TURTLE, HAWKSBILL SEA	KNOWN	REPTILE	E
TURTLE, KEMP'S RIDLEY SEA	KNOWN	REPTILE	E
TURTLE, LEATHERBACK SEA	KNOWN	REPTILE	E
TURTLE, LOGGERHEAD SEA	KNOWN	REPTILE	T
VERNON			
EAGLE, BALD	KNOWN[2]	BIRD	T
SNAKE, LOUISIANA PINE	KNOWN	REPTILE	C
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E

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PARISH	OCCURRENCE	GROUP	STATUS
WASHINGTON			
QUILLWORT, LOUISIANA	KNOWN	PLANT	E
STURGEON, GULF	KNOWN	FISH	T, CH
TORTOISE, GOPHER	KNOWN	REPTILE	T
TURTLE, RINGED MAP	KNOWN	REPTILE	T
WEBSTER			
EAGLE, BALD	KNOWN[2]	BIRD	T
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E
WEST BATON ROUGE			
STURGEON, PALLID	KNOWN	FISH	E
WEST CARROLL			
BEAR, LOUISIANA BLACK	KNOWN	MAMMAL	T
WEST FELICIANA			
BEAR, LOUISIANA BLACK	POSSIBLE	MAMMAL	T
STURGEON, PALLID	KNOWN	FISH	E
WINN			
EARTH FRUIT	KNOWN	PLANT	T
STURGEON, PALLID	POSSIBLE	FISH	E
WOODPECKER, RED-COCKADED	KNOWN	BIRD	E

[1] Endangered - any species which is in danger of extinction throughout all or a significant portion of its range.

Threatened - any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Candidate - plant and animal taxa considered for possible addition to the List of Endangered and Threatened Species. These are taxa for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposal to list, but issuance of a proposed rule is currently precluded by higher priority listing actions.

Critical habitat - for listed species consists of: (1) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of the Act, on which are found those physical or biological features (constituent elements) (a) essential to the conservation of the species and (b) which may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.

[2] Known wintering/roosting areas only - no known nesting locations

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THREATENED AND ENDANGERED SPECIES

E=Endangered; T=Threatened; C=Candidate

MAMMALS	GENERAL DISTRIBUTION IN LOUISIANA
Bear, Louisiana black (*Ursus americanus luteolus*)	T Entire state
Manatee, West Indian (*Trichechus manatus*) North shore; rare along Gulf coast	E Lake Pontchartrain & tributaries on
Panther, Florida (*Felis concolor coryi*)	E[1] Entire state
Whale, finback (*Balaenoptera physalus*)	E Coastal waters
Whale, humpback (*Megaptera novaeangliae*)	E Coastal waters
Whale, right (*Eubalaena glacialis*)	E Coastal waters
Whale, sei (*Balaenoptera borealis*)	E Coastal waters
Whale, sperm (*Physeter catodon*)	E Coastal waters
Wolf, red (*Canis rufus*)	E[1] Cameron and Calcasieu Parishes
BIRDS	
Curlew, Eskimo (*Numenius borealis*)	E[1] Entire state
Eagle, bald (*Haliaeetus leucocephalus*)	T Entire state
Pelican, brown (*Pelecanus occidentalis*)	E Coast
Plover, piping (*Charadrius melodus*)	T Coast
Tern, least; interior population (*Sterna antillarum*)	E Mississippi River, North of Baton Rouge Red River north of Shreveport & Loggy Bayou
Warbler, Bachman's (*Vermivora bachmanii*)	E[2] Entire state
Woodpecker, ivory-billed (*Campephilus principalis*)	E[1] Entire state
Woodpecker, red-cockaded (*Picoides (Dendrocopos) borealis*)	E Entire state except Delta
REPTILES	
Alligator, American (*Alligator mississippiensis*)	T(S/A)[3] Entire state
Snake, Louisiana Pine (*Pituophis ruthveni*)	C Bienville, Natchitoches, Sabine and Vernon Parishes
Tortoise, gopher (*Gopherus polyphemus*)	T Washington, St. Tammany, and Tangipahoa Parishes
Turtle, Kemp's (Atlantic) ridley (*Lepidochelys kempii*)	E Coastal waters
Turtle, green (*Chelonia mydas*)	T Coastal waters
Turtle, hawksbill (*Eretmochelys imbricata*)	E Coastal waters
Turtle, leatherback (*Dermochelys coriacea*)	E Coastal waters
Turtle, loggerhead (*Caretta caretta*)	T Coastal waters
Turtle, ringed map (*Graptemys oculifera*)	T Pearl and Bogue Chitto Rivers
FISH	

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Sturgeon, Gulf (*Acipenser oxyrhynchus desotoi*)	T	Pearl River & Lake Pontchartrain tributaries
Sturgeon, Pallid (*Scaphirhynchus albus*)	E	Mississippi River & tributaries
INVERTEBRATES		
Mussel, Inflated heelsplitter (*Potamilus inflatus*)	T	Amite River
Mussel, Louisiana pearlshell (*Margaritifera hembeli*)	T	Bayou Boeuf drainage Rapides and Grant Parishes
Mussel, Pink mucket pearly (*Lampsilis abrupta*)	E	Bayou Bartholomew
PLANTS		
American Chaff-seed (*Schwalbea americana*)	E	Allen Parish
Earth fruit (*Geocarpon minimum*)	T	Winn Parish
Louisiana quillwort (*Isoetes louisianensis*)	E	Washington and St. Tammany Parishes

[1] The Florida panther, red wolf, Eskimo curlew, and ivory-billed woodpecker are presumed to be extinct in the state.

[2] There has been no confirmed Bachman's Warbler U.S. nesting ground sighting since the mid-1960's, however, several sightings of the species have occurred on wintering grounds during the last decade. This species may be extirpated in Louisiana.

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[3] For law enforcement purposes the alligators in Louisiana are classified as "Threatened due to Similarity of Appearance". They are biologically neither endangered nor threatened. Regulated harvest is permitted under State law.

September 21, 1998

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State of Louisiana

Department of Environmental Quality

M. J. "MIKE" FOSTER, JR.
GOVERNOR

L. HALL BOHLINGER
SECRETARY

January 8, 2004

Ms. Elizabeth Pruitt, Program Manager
Geo-Marine, Inc.
11846 Rock Landing Drive
Suite C
Newport News, VA 23606

Re: Letter of Support for Conservation Reserve Enhancement Program (CREP) Agreement

Dear Ms. Pruitt:

This letter is written in support of the CREP agreement for the Lower Ouachita River Basin. The Nonpoint Source Program within the Louisiana Department of Environmental Quality (LDEQ) will be working on watershed implementation plans for the watersheds within this part of the state during 2004, which have had total maximum daily loads (TMDLs) completed for them. The majority of these TMDLs indicated that the dissolved oxygen problems within the water bodies were related to nonpoint source loading of sediments, nutrients and organic material from agricultural fields. LDEQ will be collecting water quality data within the Ouachita River Basin during 2004 to determine if water quality improvements have been made since data was collected in 1999 and TMDLs were developed.

In order to reduce and control these types of pollutants, there will need to be agricultural best management practices implemented that are consistent with the types of practices that the CREP Agreement would provide. Therefore, this program is consistent with the goals and objectives of Section 319 of the Clean Water Act and the State's Nonpoint Source Management Program. If you need additional information on TMDLs or the NPS Program, please do not hesitate to contact me at Jan.Boydstun@LA.gov.

Sincerely,

Jan R. Boydstun
Environmental Scientist Supervisor
Nonpoint Source Unit

C: Willie Cooper
Reading file

OFFICE OF ENVIRONMENTAL ASSESSMENT
P.O. BOX 4314 • BATON ROUGE, LOUISIANA 70821-4314 • TELEPHONE (225) 219-3236 • FAX (225) 219-3239
AN EQUAL OPPORTUNITY EMPLOYER

KATHLEEN BABINEAUX BLANCO
LIEUTENANT GOVERNOR

State of Louisiana
OFFICE OF THE LIEUTENANT GOVERNOR
DEPARTMENT OF CULTURE, RECREATION & TOURISM
OFFICE OF CULTURAL DEVELOPMENT
DIVISION OF ARCHAEOLOGY

PHILLIP J. JONES
SECRETARY

LAUREL WYCKOFF
ASSISTANT SECRETARY

December 23, 2003

Ms. Elizabeth Pruitt
Geo-Marine, Inc.
11846 Rock Landing Drive
Suite C
Newport News, VA 23606

Re: Programmatic Environmental Assessment (PEA) for
Proposed Implementation of Louisiana' Lower Ouachita
River Basin Conservation Reserve Enhancement
Program (CREP) Agreement
Caldwell, East Carroll, Franklin, Madison, Morehouse,
Ouachita, Richland, Tensas, and West Carroll Parishes, LA

Dear Ms. Pruitt:

Reference is made to Mr. Willie F. Cooper's letter dated December 17, 2003, concerning the above-referenced project. Due to staff and time constraints our office is not able to fill this large information request. However, you or members of your staff are welcome to visit our office and research our files.

You will need to contact several of Louisiana's federally recognized Native American Tribes to gather complete information on Traditional Cultural Properties (TCP). I have enclosed a tribal contact list for your use. Furthermore, you can get the parish specific information for the tribal contacts at the Advisory Council's web site (http://www.achp.gov/).

Please contact Rachel Watson in the Division of Archaeology (225) 342-8170 at set up an appointment. Thank you.

Sincerely,

Laurel Wyckoff
State Historic Preservation Officer

LW:RW:s

P.O. BOX 44247 • BATON ROUGE, LOUISIANA 70804-4247 • PHONE (225) 342-8170 • FAX (225) 342-4480 • WWW.CRT.STATE.LA.US
AN EQUAL OPPORTUNITY EMPLOYER

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Updated: December 29, 2003

List of Federally and State Recognized Native American Tribes and Other Contacts - State of Louisiana

Federal:

Chitimacha Tribe of Louisiana
Alton LeBlanc, Chairman
P.O. Box 661
Charenton, LA 70523
Phone (337) 923-7215
Fax (337) 923-6848
*** Kimberly Walden**
Phone (337) 923-9923

Coushatta Tribe of Louisiana
Lovelin Poncho, Chairman
P.O. Box 818
Elton, LA 70532
Phone (337) 584-2261
Fax (337) 584-2998

Jena Band of Choctaw Indians
Christine Norris, Tribal Chief
P.O. Box 14
Jena, LA 71342
Phone (318) 992-2717
Fax (318) 992-2771
*** Christine Norris**

Tuinca-Biloxi Indians of Louisiana
Earl J. Barbry, Sr., Chairman
P.O. Box 1589
Marksville, LA 71351
Phone (318) 253-9767
Fax (318) 253-9791
*** Earl Barbry, Jr.**
Phone (318) 253-7032, Ext. 102

Alabama Coushatta Tribe of Texas
Kevin Battise, Chairman
571 State Park Rd. 56
Livingston, TX 77351
Phone (936) 563-1181
Fax (936) 563-1183
*** Debbie Thomas**

Caddo Nation
LaRue Parker, Chairperson
P.O. Box 487
Binger, OK 73009
Phone (405) 656-2344
Fax (405) 656-2892
*** Robert Cast or Bobby Gonzales**
Phone (405) 656-2901

Mississippi Band of Choctaw Indians
Phillip Martin, Chief
P.O. Box 6257
Philadelphia, MS 39350
Phone (601) 656-5251
Fax (601) 656-1992
*** Kenneth Carleton**
Phone (601) 650-7316

Quapaw Tribe of Oklahoma
John Berrey, Chair
P.O. Box 765
Quapaw, OK 74363-0765
Phone (918) 542-1853
Fax (918) 542-4694
*** Carrie Wilson**
Phone (479) 442-7576
Fax (479) 575-5453

State:

Caddo Adai Indians of Louisiana
Rufus Davis, Jr., Chairman
Route 2, Box 246
Robeline, LA 71469
Phone (318) 472-8680
Fax (318) 472-8684
cheifdav1

Choctaw-Apache Tribe of Ebarb
Tommy W. Bolton, Chairman
P.O. Box 1428
Zwolle, LA 71486
Phone (318) 645-2588
Fax (318) 645-2589
cate@cp-tel.net

Clifton Choctaw Tribe of Louisiana
Roy L. Tyler, Chairman
1312 Clifton Road
Clifton, LA 71447
Phone (318) 793-8236
Fax (318) 793-8236

Four-Winds Cherokee Tribe
Billy Sinor, Council
139 Sinor Drive
Leesville, LA 71446
Phone (337) 537-8318
Fax (337) 537-2611
bgsinor@wnonline.net

United Houma Nation
Brenda Dardar Robichaux, Principal Chief
20986 Highway 1
Golden Meadow, LA 70357
Phone (504) 475-6640
Fax (504) 475-7109
bdrhouma@aol.com

Other:

Apalachee Talimali Band of Louisiana
Gilmer Bennett
P.O. Box 84
Libuse, LA 71348
Phone (318) 473-4412
Fax (318) 561-2333

Governor's Office of Indian Affairs
Joey Strickland, Director
Pat Arnould, Deputy Director
P.O. Box 94004
Baton Rouge, LA 70804
Phone (225) 219-7556
Fax (225) 219-7551
pla@indianaffairs.com

Inter-Tribal Council of Louisiana, Inc.
Kevin Billiot, Director
5723 Superior Dr., Suite B-1
Baton Rouge, LA 70816
Phone (225) 292-2474

*** Contact Person(s)**

1
2

State of Louisiana

Dwight Landreneau
Secretary

Department of Wildlife & Fisheries
Post Office Box 98000
Baton Rouge, LA 70898-9000
(225) 765-2800

Kathleen Babineaux Blanco
Governor

February 4, 2004

Elizabeth Pruitt
Geo-Marine, Inc.
11846 Rock Landing Drive; Suite C
Newport News, VA 23606

Re: USDA submitted request for habitat and species of concern for Louisiana's Lower Ouachita River Basin Conservation Reserve Enhancement Program (CREP)

Dear Ms. Pruitt,

A letter from Willie F. Cooper of the United States Department of Agriculture (USDA) dated December 17, 2003, indicated that the Programmatic Environmental Assessment (PEA) to be prepared by Geo-Marine was not site specific but covers the whole of Caldwell, East Carroll, Franklin, Madison, Morehouse, Ouachita, Richland, Tensas and West Carroll Parishes. We have included a copy of the letter submitted to our office from the USDA as well as lists of rare elements we track in these Parishes. These lists were prepared by the Louisiana Natural Heritage Program (LNHP) in September of 2003. For information regarding natural and scenic streams in these Parishes, please contact Keith Cascio with the Louisiana Department of Wildlife and Fisheries (LDWF) at 318-343-4044. For information regarding LDWF Wildlife Management Areas in these Parishes, please contact Jimmy Anthony with LDWF at 225-765-2347.

The LNHP has compiled data on rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features throughout the state of Louisiana. The quantity and quality of data collected by the LNHP are dependent on the research and observations of many individuals. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in Louisiana have not been surveyed. The LNHP database represents a compilation of information extracted from published and unpublished literature, museums and herbaria, field surveys, personal communications, and other sources. Records for new occurrences of plants and animals are continuously being added to the database and other occurrence records may change as new information is gathered. The LNHP cannot provide a definitive statement on the presence, or absence, or condition of biological elements in any part of Louisiana. Heritage reports summarize the existing information known at the time of the request regarding the location in question. They should not be considered final statements on the biological elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The Louisiana Natural Heritage Program requires that this office be acknowledged in all reports as the source of all data provided here. Feel free to contact me at 225-765-2357 with any questions you may have.

Sincerely,

Joshua Concienne
Assistant Data Manager
LNHP - LDWF

Enclosures

Cc: Willie F. Cooper, USDA
Keith Cascio, LDWF
Jimmy Anthony, LDWF

An Equal Opportunity Employer

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USDA

United States Department of Agriculture

Farm and Foreign Agricultural Services

Farm Service Agency

Louisiana State FSA Office
3737 Government St
Alexandria, LA
71302-3395

December 17, 2003

Jimmy Jenkins
Louisiana Department of Fish and Wildlife
2000 Quail Drive
Baton Rouge, LA 70808

RE: Programmatic Environmental Assessment (PEA) for Proposed Implementation of Louisiana's Lower Ouachita River Basin Conservation Reserve Enhancement Program (CREP) Agreement

Our contractor, Geo-Marine, Inc., is preparing a PEA for the proposed implementation of Louisiana's Lower Ouachita River Basin CREP agreement. The agreement would enroll 50,000 acres of lands in the following parishes in CREP: Caldwell, East Carroll, Franklin, Madison, Morehouse, Ouachita, Richland, Tensas, and West Carroll Parishes. Approved conservation practices would be established on these lands and landowners would receive support for the costs of installing and maintaining such practices as well as annual rental payments for lands enrolled in the program.

Pursuant to the National Environmental Policy Act, we are requesting information regarding species of concern and important habitats that may be present in the proposed CREP area.

Please forward your responses by 15 January 2004 to Elizabeth Pruitt, Geo-Marine's Program Manager:

Geo-Marine, Inc.
11846 Rock Landing Drive
Suite C
Newport News, VA 23606

If you have any questions regarding this request, please feel free to contact Ms. Pruitt at (757) 873-8253. Thank you in advance for your input; it will greatly assist us in our planning.

Sincerely,

WILLIE F. COOPER
State Executive Director

RECEIVED
DEC 19 2003
OFFICE OF THE SECRETARY

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EXPLANATION OF RANKING CATEGORIES EMPLOYED BY NATURAL HERITAGE PROGRAMS NATIONWIDE

Each element is assigned a single global rank as well as a state rank for each state in which it occurs. Global ranking is done under the guidance of NatureServe, Arlington, VA. State ranks are assigned by each state's Natural Heritage Program, thus a rank for a particular element may vary considerably from state to state. Federal ranks are designated by the U.S. Fish & Wildlife Service under the provisions of the Endangered Species Act of 1973.

FEDERAL RANKS (USESA FIELD):

LE = Listed Endangered

LT = Listed Threatened

PE = Proposed endangered

PT = Proposed Threatened

C = Candidate

PDL = Proposed for delisting

E (S/A) or T (S/A) = Listed endangered or threatened because of similarity of appearance

XE = Essential experimental population

XN = Nonessential experimental population

No Rank = Usually indicates that the taxon does not have any federal status. However, because of potential lag time between publication in the Federal Register and entry in the central databases and state databases, some taxa may have a status which does not yet appear.

(Rank_Rank) = Combination values in parenthesis = The taxon itself is not named in the Federal Register as having U.S. ESA status; however, all of its infraspecific taxa (worldwide) do have official status. The statuses shown in parentheses indicate the statuses that apply to infraspecific taxa or populations within this taxon. *THE SPECIES IS CONSIDERED TO HAVE A COMBINATION STATUS IN LOUISIANA*

(PS) = partial status= Status in only a portion of the species' range. Typically indicated in a "full" species record where an infraspecific taxon or population has U.S. ESA status, but the entire species does not. *THE SPECIES DOES NOT HAVE A STATUS IN LOUISIANA*

(PS: Rank) = partial status= Status in only a portion of the species' range. The value of that status appears because the entity with status does not have an individual entry in Natureserve. *THE SPECIES MAY HAVE A STATUS IN LOUISIANA*

GLOBAL ELEMENT RANKS:

G1 = critically imperiled globally because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extinction

G2 = imperiled globally because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extinction throughout its range

G3 = either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single physiographic region) or because of other factors making it vulnerable to extinction throughout its range (21 to 100 known extant populations)

G4 = apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery (100 to 1000 known extant populations)

G5 = demonstrably secure globally, although it may be quite rare in parts of its range, especially at the periphery (1000+ known extant populations)

GH = of historical occurrence throughout its range; i.e., formerly part of the established biota, with the possibility that it may be rediscovered (e.g., Bachman's Warbler)

GU = possibly in peril range-wide, but status uncertain; need more information

G? = rank uncertain. Or a range (e.g., G3G5) delineates the limits of uncertainty

GQ = uncertain taxonomic status

GX = believed to be extinct throughout its range (e.g., Passenger Pigeon) with virtually no likelihood that it will be rediscovered

T = subspecies or variety rank (e.g., G5T4 applies to a subspecies with a global species rank of G5, but with a subspecies rank of G4)

STATE ELEMENT RANKS:

S1 = critically imperiled in Louisiana because of extreme rarity (5 or fewer known extant populations) or because of some factor(s) making it especially vulnerable to extirpation

S2 = imperiled in Louisiana because of rarity (6 to 20 known extant populations) or because of some factor(s) making it very vulnerable to extirpation

S3 = rare and local throughout the state or found locally (even abundantly at some of its locations) in a restricted region of the state, or because of other factors making it vulnerable to extirpation (21 to 100 known extant populations)

S4 = apparently secure in Louisiana with many occurrences (100 to 1000 known extant populations)

S5 = demonstrably secure in Louisiana (1000+ known extant populations)

(B or N may be used as qualifier of numeric ranks and indicating whether the occurrence is breeding or nonbreeding)

SA = accidental in Louisiana, including species (usually birds or butterflies) recorded once or twice or only at great intervals hundreds or even thousands of miles outside their usual range

SH = of historical occurrence in Louisiana, but no recent records verified within the last 20 years; formerly part of the established biota, possibly still persisting

SR = reported from Louisiana, but without conclusive evidence to accept or reject the report

SU = possibly in peril in Louisiana, but status uncertain; need more information

SX = believed to be extirpated from Louisiana

SZ = transient species in which no specific consistent area of occurrence is identifiable

1

Rare Elements Tracked by the Louisiana Natural Heritage Program in Caldwell Parish
Updated September 2003

Common Name	Scientific Name	State Rank	Global Rank	Usesa
AUTUMN CORAL-ROOT	CORALLORHIZA ODONTORHIZA	S1	G5	
BIG BROWN BAT	EPTESICUS FUSCUS	S1S2	G5	
BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST	S4		
CALCAREOUS FOREST	CALCAREOUS FOREST	S2	G2Q	
CEDAR WOODLAND	CEDAR WOODLAND	S1		
CRESTED CORAL-ROOT	HEXALECTRIS SPICATA	S2	G5	
DURAND'S WHITE OAK	QUERCUS SINUATA VAR SINUATA	S1	G5T5	
EARED GOLDENROD	SOLIDAGO AURICULATA	S3	G4	
EASTERN LEATHERWOOD	DIRCA PALUSTRIS	S1	G4	
HARDWOOD SLOPE FOREST	HARDWOOD SLOPE FOREST	S3S4		
JACKSON CALCAREOUS PRAIRIE	JACKSON CALCAREOUS PRAIRIE	S1	G1Q	
LANCE-LEAVED BUCKTHORN	RHAMNUS LANCEOLATA	S1	G5	
NORTHERN PRICKLEY ASH	ZANTHOXYLUM AMERICANUM	S1	G5	
NUTTALL DEATH CAMAS	ZIGADENUS NUTTALLII	S1	G5	
OGLETHORPE'S OAK	QUERCUS OGLETHORPENSIS	S1	G3	
OUACHITA FENCING CRAWFISH	FAXONELLA CREASERI	S2	G2	
PINE HILLS CRAWFISH	FALLICAMBARUS DISSITUS	S2	G4	
PRAIRIE PLEAT-LEAF	NEMASTYLIS GEMINIFLORA	S2S3	G4	
PURPLE BLUET	HOUSTONIA PURPUREA VAR CALYCOSA	S2	G5T5	
PURPLE CONEFLOWER	ECHINACEA PURPUREA	S2	G4	
SHADOW-WITCH ORCHID	PONTHIEVA RACEMOSA	S2	G4G5	
SIDE-OATS GRAMA	BOUTELOUA CURTIPENDULA	S1	G5	
SOUTHERN MESOPHYTIC FOREST	SOUTHERN MESOPHYTIC FOREST	S2S3		
STARRY CAMPION	SILENE STELLATA	S2	G5	
STATE CHAMPION TREE	STATE CHAMPION TREE			
TALL BELLFLOWER	CAMPANULASTRUM AMERICANUM	S1	G5	
THOROUGHWORT	EUPATORIUM PURPUREUM	S1	G5	
THREE-FLOWERED HAWTHORN	CRATAEGUS TRIFLORA	S1	G2	
WAHOO	EUONYMUS ATROPURPUREUS	S1	G5	
WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY			
WHITE-LEAVED LEATHER-FLOWER	CLEMATIS GLAUCOPHYLLA	S1	G4?	
YELLOW PIMPERNELL	TAENIDIA INTEGERRIMA	S2	G5	

Page 1 of 1

1

Rare Elements Tracked by the Louisiana Natural Heritage Program in East Carroll Parish
Updated September 2003

Common Name	Scientific Name	State Rank	Global Rank	Usesa
BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST	S4		
INTERIOR LEAST TERN	STERNA ANTILLARUM ATHALASSOS	S1B	G4T2Q	(PS:LE)
NATIONAL CHAMPION TREE	NATIONAL CHAMPION TREE			
PALLID STURGEON	SCAPHIRHYNCHUS ALBUS	S1	G1	LE
STEELCOLOR SHINER	CYPRINELLA WHIPPLEI	S2S3	G5	
WESTERN UMBRELLA-GRASS	FUIRENA SIMPLEX	S1	G5	

Page 1 of 1

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Rare Elements Tracked by the Louisiana Natural Heritage Program in Franklin Parish
Updated September 2003

Common Name	Scientific Name	State Rank	Global Rank	Usesa
BALD EAGLE	HALIAEETUS LEUCOCEPHALUS	S2N,S3B	G4	(PS:LT,PDL)
BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST	S4		
CYPRESS-TUPELO SWAMP	CYPRESS-TUPELO SWAMP	S4		
EASTERN MANAGRASS	GLYCERIA SEPTENTRIONALIS	S1	G5	
LOUISIANA BLACK BEAR	URSUS AMERICANUS LUTEOLUS	S2	G5T2	LT
MESIC HARDWOOD FLATWOODS	MESIC HARDWOOD FLATWOODS	S2S3		
MISSISSIPPI TERRACE PRAIRIE	MISSISSIPPI TERRACE PRAIRIE	S1		
PADDLEFISH	POLYODON SPATHULA	S3	G4	
PYRAMID PIGTOE	PLEUROBEMA RUBRUM	S2	G2	
RINGTAIL	BASSARISCUS ASTUTUS	S?	G5	
SANDHILL CRANE	GRUS CANADENSIS	S1N	G5	(PS)
SMALL STREAM FOREST	SMALL STREAM FOREST	S3		
SWEETGUM-WATER OAK BOTTOMLAND FOREST	SWEETGUM-WATER OAK BOTTOMLAND FOREST	S4		
THREE-ANGLE SPIKERUSH	ELEOCHARIS TRICOSTATA	S1?	G4	
WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY			
WESTERN WORM SNAKE	CARPHOPHIS AMOENUS VERMIS	S1	G5T5	
WET HARDWOOD FLATWOODS	WET HARDWOOD FLATWOODS	S2S3		

Page 1 of 1

Rare Elements Tracked by the Louisiana Natural Heritage Program in Madison Parish
Updated September 2003

Common Name	Scientific Name	State Rank	Global Rank	Usesa
ALLIGATOR SNAPPING TURTLE	MACROCLEMYS TEMMINCKII	S3	G3G4	
BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST	S4		
CERULEAN WARBLER	DENDROICA CERULEA	S1B	G4	
EBONYSHELL	FUSCONAIA EBENA	S3	G4G5	
FATMUCKET	LAMPSILIS SILIQUOIDEA	S1S3	G5	
GOLDEN EAGLE	AQUILA CHRYSAETOS	S1N	G5	
INTERIOR LEAST TERN	STERNA ANTILLARUM ATHALASSOS	S1B	G4T2Q	(PS:LE)
LOUISIANA BLACK BEAR	URSUS AMERICANUS LUTEOLUS	S2	G5T2	LT
LONG-BEAKED BALDRUSH	RHYNCHOSPORA SCIRPOIDES	S1	G4	
MUCKET	ACTINONAIAS LIGAMENTINA	SH	G5	
PRAIRIE CORDGRASS	SPARTINA PECTINATA	S1	G5	
PYRAMID PIGTOE	PLEUROBEMA RUBRUM	S2	G2	
RED WOLF	CANIS RUFUS	SX	G1	LE, XN
SANDHILL CRANE	GRUS CANADENSIS	S1N	G5	(PS)
SILTY HORNSNAIL	PLEUROCERA CANALICULATA	S2	G5	
SPIKE	ELLIPTIO DILATATA	S2S3	G5	
SQUAWFOOT	STROPHITUS UNDULATUS	S2	G5	
WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY			
WHITE HEELSPLITTER	LASMIGONA COMPLANATA	S1	G5	

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Rare Elements Tracked by the Louisiana Natural Heritage Program in Morehouse Parish
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Common Name	Scientific Name	State Rank	Global Rank	Usesa
A CRAWFISH	PROCAMBARUS ELEGANS	S2	G4	
AMERICAN HAZELNUT	CORYLUS AMERICANA	S1	G5	
BALD EAGLE	HALIAEETUS LEUCOCEPHALUS	S2N,S3B	G4	(PS:LT,PDL)
BELL'S VIREO	VIREO BELLII	SAN,S1B	G5	(PS)
BIGEYE SHINER	NOTROPIS BOOPS	S3	G5	
BLUE SUCKER	CYCLEPTUS ELONGATUS	S2S3	G3G4	
BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST	S4		
BUTTERFLY	ELLIPSARIA LINEOLATA	S1	G4	
CHANNEL DARTER	PERCINA COPELANDI	S1S2	G4	
CRYSTAL DARTER	CRYSTALLARIA ASPRELLA	S2S3	G3	
DWARF GRAY WILLOW	SALIX HUMILIS VAR TRISTIS	S2	G5T4T5	
EBONYSHELL	FUSCONAIA EBENA	S3	G4G5	
FATMUCKET	LAMPSILIS SILIQUOIDEA	S1S3	G5	
FIRE PINK	SILENE VIRGINICA	S2	G5	
FOWL MANNA-GRASS	GLYCERIA STRIATA	S1	G5	
HICKORYNUT	OBOVARIA OLIVARIA	S1	G4	
LOG FERN	DRYOPTERIS CELSA	S1	G4	
LONG'S YELLOW STAR-GRASS	HYPOXIS LONGII	S4	G4	
MEADOW EVENING PRIMROSE	OENOTHERA PILOSELLA SSP SESSILIS	S1?	G5T2Q	
MESIC HARDWOOD FLATWOODS	MESIC HARDWOOD FLATWOODS	S2S3		
MONKEYFACE	QUADRULA METANEVRA	S1	G4	
OUACHITA KIDNEYSHELL	PTYCHOBRANCHUS OCCIDENTALIS	S1	G3G4	
PINK MUCKET	LAMPSILIS ABRUPTA	S1	G2	LE
PLAIN POCKETBOOK	LAMPSILIS CARDIUM	S1	G5	
PRAIRIE PLEAT-LEAF	NEMASTYLIS GEMINIFLORA	S2S3	G4	
PURPLE CONEFLOWER	ECHINACEA PURPUREA	S2	G4	
PYRAMID PIGTOE	PLEUROBEMA RUBRUM	S2	G2	
RABBITSFOOT	QUADRULA CYLINDRICA	S1	G3	(PS)
RED-COCKADED WOODPECKER	PICOIDES BOREALIS	S2	G3	LE
SANDHILL CRANE	GRUS CANADENSIS	S1N	G5	(PS)
SESSILE-LEAVED BELLWORT	UVULARIA SESSILIFOLIA	S2	G5	
SILTY HORNSNAIL	PLEUROCERA CANALICULATA	S2	G5	
SOUTHERN PRAIRIE SKINK	EUMECES SEPTENTRIONALIS	S1	G5	
SPIKE	ELLIPTIO DILATATA	S2S3	G5	
WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY			
WESTERN WORM SNAKE	CARPHOPHIS AMOENUS VERMIS	S1	G5T5	

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WET HARDWOOD FLATWOODS	WET HARDWOOD FLATWOODS	S2S3		
WOLF SPIKERUSH	ELEOCHARIS WOLFII	S1?	G3?	
YELLOWLEAF TINKER'S-WEED	TRIOSTEUM ANGUSTIFOLIUM	S2	G5	

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Rare Elements Tracked by the Louisiana Natural Heritage Program in Ouachita Parish
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Common Name	Scientific Name	State Rank	Global Rank	Usesa
ALLIGATOR SNAPPING TURTLE	MACROCLEMYS TEMMINCKII	S3	G3G4	
AMERICAN PINESAP	MONOTROPA HYPOPITHYS	S2	G5	
BALD EAGLE	HALIAEETUS LEUCOCEPHALUS	S2N,S3B	G4	(PS:LT,PDL)
BIG BROWN BAT	EPTESICUS FUSCUS	S1S2	G5	
BIGEYE SHINER	NOTROPIS BOOPS	S3	G5	
BLUEHEAD SHINER	PTERONOTROPIS HUBBSI	S2	G3	
CHANNEL DARTER	PERCINA COPELANDI	S1S2	G4	
CRESTED CORAL-ROOT	HEXALECTRIS SPICATA	S2	G5	
CRYSTAL DARTER	CRYSTALLARIA ASPRELLA	S2S3	G3	
CYPRESS-KNEE SEDGE	CAREX DECOMPOSITA	S1	G3	
DWARF GRAY WILLOW	SALIX HUMILIS VAR TRISTIS	S2	G5T4T5	
FAIRY WAND	CHAMAELIRIUM LUTEUM	S2S3	G5	
FIRE PINK	SILENE VIRGINICA	S2	G5	
GREAT PLAINS LADIES'-TRESSES	SPIRANTHES MAGNICAMPORUM	S2	G4	
HARDWOOD SLOPE FOREST	HARDWOOD SLOPE FOREST	S3S4		
LARGE WHORLED POGONIA	ISOTRIA VERTICILLATA	S3	G5	
LONG-TAILED WEASEL	MUSTELA FRENATA	S2S4	G5	
LOUISIANA SLIMY SALAMANDER	PLETHODON KISATCHIE	S1S2	G3G4Q	
MIXED HARDWOOD-LOBLOLLY FOREST	MIXED HARDWOOD-LOBLOLLY FOREST	S4		
NORTHERN BURMANNIA	BURMANNIA BIFLORA	S2	G4G5	
PADDLEFISH	POLYODON SPATHULA	S3	G4	
RED-COCKADED WOODPECKER	PICOIDES BOREALIS	S2	G3	LE
SOUTHERN LADY'S-SLIPPER	CYPRIPEDIUM KENTUCKIENSE	S1	G3	
STAGHORN CLUBMOSS	LYCOPODIELLA CERNUA VAR CERNUA	S2	G5T5	
STATE CHAMPION TREE	STATE CHAMPION TREE			
STEELCOLOR SHINER	CYPRINELLA WHIPPLEI	S2S3	G5	
VERNAL CRAWFISH	PROCAMBARUS VIAEVIRIDIS	S2S3	G5	
WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY			
WESTERN WORM SNAKE	CARPHOPHIS AMOENUS VERMIS	S1	G5T5	
WIRY WITCHGRASS	PANICUM FLEXILE	S1	G5	

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Rare Elements Tracked by the Louisiana Natural Heritage Program in Richland Parish
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Common Name	Scientific Name	State Rank	Global Rank	Usesa
BLACK SANDSHELL	LIGUMIA RECTA	S1	G5	
BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST	S4		
CYPRESS SWAMP	CYPRESS SWAMP	S4		
EBONYSHELL	FUSCONAIA EBENA	S3	G4G5	
LOUISIANA BLACK BEAR	URSUS AMERICANUS LUTEOLUS	S2	G5T2	LT
MESIC HARDWOOD FLATWOODS	MESIC HARDWOOD FLATWOODS	S2S3		
MIXED HARDWOOD-LOBLOLLY FOREST	MIXED HARDWOOD-LOBLOLLY FOREST	S4		
PURPLE CONEFLOWER	ECHINACEA PURPUREA	S2	G4	
PYRAMID PIGTOE	PLEUROBEMA RUBRUM	S2	G2	
SILTY HORNSNAIL	PLEUROCERA CANALICULATA	S2	G5	
SPIKE	ELLIPTIO DILATATA	S2S3	G5	
WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY	S2S3		
WET HARDWOOD FLATWOODS	WET HARDWOOD FLATWOODS	S1?	G3?	
WOLF SPIKERUSH	ELEOCHARIS WOLFII	S2	G5	
YELLOWLEAF TINKER'S-WEED	TRIOSTEUM ANGUSTIFOLIUM			

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Rare Elements Tracked by the Louisiana Natural Heritage Program in Tensas Parish
Updated September 2003

Common Name	Scientific Name	State Rank	Global Rank	Usesa
ALLIGATOR SNAPPING TURTLE	MACROCLEMYS TEMMINCKII	S3	G3G4	
BALD EAGLE	HALIAEETUS LEUCOCEPHALUS	S2N,S3B	G4	(PS:LT,PDL)
BOTTOMLAND HARDWOOD FOREST	BOTTOMLAND HARDWOOD FOREST	S4		
DWARF LIVE OAK	QUERCUS MINIMA	S?	G5	
FAT POCKETBOOK	POTAMILUS CAPAX	S1	G1	LE
GULF PIPEFISH	SYNGNATHUS SCOVELLI	S4	G5	
INTERIOR LEAST TERN	STERNA ANTILLARUM ATHALASSOS	S1B	G4T2Q	(PS:LE)
LOUISIANA BLACK BEAR	URSUS AMERICANUS LUTEOLUS	S2	G5T2	LT
MEADOW EVENING PRIMROSE	OENOTHERA PILOSELLA SSP SESSILIS	S1?	G5T2Q	
PADDLEFISH	POLYODON SPATHULA	S3	G4	
PALLID STURGEON	SCAPHIRHYNCHUS ALBUS	S1	G1	LE
SNOW MELANTHERA	MELANTHERA NIVEA	S2	G5	
SQUARE-STEMMED MONKEY-FLOWER	MIMULUS RINGENS	S2	G5	
STATE CHAMPION TREE	STATE CHAMPION TREE			
WATERBIRD NESTING COLONY	WATERBIRD NESTING COLONY			

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